

subLOGIC Scenery Disk

Database Design by Michael Woodley

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First Printing
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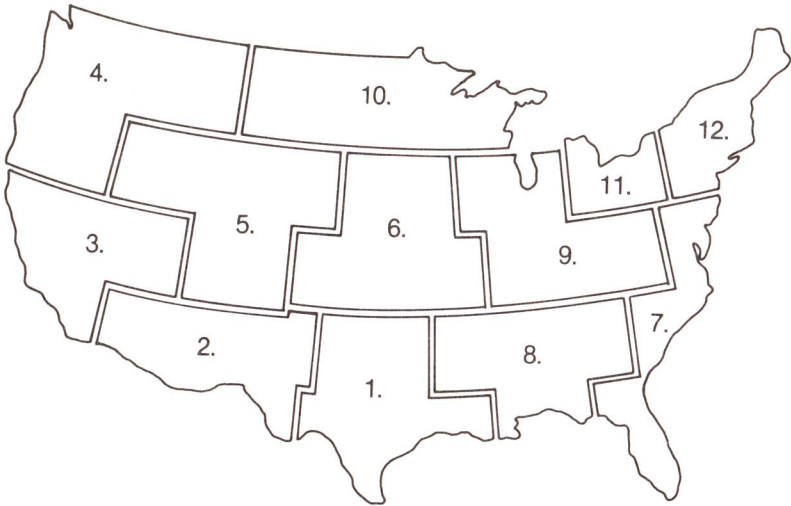
Introduction

SubLOGIC Scenery Disks are an enhancement designed to expand the potential flying environment of Flight Simulator II and other SubLOGIC flight simulation programs. You must have Flight Simulator II, Microsoft Flight Simulator, or Jet in order to use a Scenery Disk.

Twelve separate Scenery Disks covering the entire continental United States were developed using NOAA (National Oceanic and Atmospheric Administration) Sectional Aeronautical Charts and Airport/Facility Directories. These charts divide the United States into 37 different sectionals. Each sectional includes all of the airfields and radio-navigation aids in the area covered by the chart. Sectional charts also show topographical information and obstacles that are important to aviators. Scenery Disk databases were digitized from these NOAA sectionals.

Scenery Disks include enough radio-navigation aids and visual scenery to allow the user to navigate anywhere in the sectional areas covered. A typical Scenery Disk (SD) covers three aeronautical sectionals, and includes approximately 100 airports and 100 radio-nav aids. Some SD's may have more airports and radio-nav aids, since some areas of the country are more densely populated than others. Any of these SD's are ideal for simulating cross-country flights.

SubLOGIC Scenery Disks are grouped by aeronautical sectional. Each SD covers a geographical region of the United States, generally comprised of three sectionals:



WEST

- 1. Dallas – Ft. Worth
Houston
San Antonio
Brownsville
- 2. Phoenix
Albuquerque
El Paso
- 3. San Francisco
Los Angeles
Las Vegas
- 4. Klamath Falls
Seattle
Great Falls
- 5. Salt Lake City
Cheyenne
Denver
- 6. Omaha
Wichita
Kansas City

EAST

- 7. Washington
Charlotte
Jacksonville
Miami
- 8. Memphis
Atlanta
New Orleans
- 9. Chicago
St. Louis
Cincinnati
- 10. Billings
Twin Cities
Green Bay
- 11. Lake Huron
Detroit
- 12. Halifax
Montreal
New York

In addition to twelve regional Scenery Disks, a number of STAR Scenery Disks are also available. A STAR Scenery Disk covers a small area with a relatively dense amount of scenery. These disks are mainly intended for visual flight (sight-seeing). They include buildings and landmarks, as well as detailed renditions of the major airports in the area.

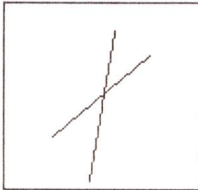
Reading a Sectional Directory

Below is a sample listing from a sectional directory with a description of the information provided. All available airports and radio-nav aids for a given sectional are listed alphabetically. Radio transmitters that border a sectional are also available on neighboring sectionals, so you can cross sectional boundaries when instrument flying.

1—2 - ALBUQUERQUE AND EL PASO—2

3—Alpine

- 4—12628N 10661E—5
- 6—alt. 4513
- 7—RWY 1-19
RWY 5-23
- 8—5999 X 72
4821 X 39



9—Anton Chico (VOR)—10

- 4—14710N 10537E—5
- 11—freq. 110

9—Artesia (NDB)—10

- 4—13703N 10575E—5
- 11—freq. 414

- 1 Page number
- 2 Sectional name
- 3 Airport name
- 4 North coordinate
- 5 East coordinate
- 6 Altitude in feet
- 7 Runway Designator, number
- 8 Runway dimensions in feet
- 9 Radio Aid name
- 10 Radio Aid type designator
- 11 Radio Aid frequency

Notice that the vertical sides of the airport map align with magnetic north. Magnetic north is the direction you are pointing when your magnetic compass reads 0. Each sectional map's VOR needles point toward magnetic north. The sides of the map align with true north. This is consistent with NOAA sectionals.

Using a Scenery Disk with Flight Simulator II

Load Flight Simulator II in the usual way. When the program has finished loading, enter the simulator's program editor as described in your operating manual and set the NORTH and EAST coordinates of the airport you've chosen from the directory for the region you'd like to explore (set ALTITUDE to 0). Exit the editor, remove the FSII disk and insert the appropriate Scenery Disk. Next, press CTRL E and wait for a menu to appear. This menu page lists the names of the sectionals included on the Scenery Disk. Press any key to exit, and you should find yourself at the airport you've selected. If no scenery is visible, go into radar mode and zoom out to determine your approximate location. You may be able to zoom all the way out and view the entire continental United States database, complete with rivers, highways, coastlines, and the Great Lakes. This default database display indicates that you are not within the boundaries of the sectionals included on your disk. Re-enter the program editor and double-check your coordinates, making sure that both NORTH and EAST coordinates are correct.

When you find yourself at the airport you've selected, it may be a good idea to save your position to a User Mode (see User Mode Library in the FSII Pilot's Operating Handbook). This way, if you crash, you will be returned to the selected airport. Otherwise you will be returned to a preset location (above Lake Michigan) in the default USA database.

Crossing a Sectional Boundary

When you fly over a sectional boundary, one of two things will occur. If the neighboring sectional is also included on your Scenery Disk, that sectional will load and you will have to switch to the appropriate new map and directory provided. If the neighboring sectional is not available on your disk, a common default USA database will load. This default database allows you to zoom out (in radar mode) to view the major geographical features of the United States.

If you have another Scenery Disk containing the appropriate sectional, you can switch disks and press CTRL E to log-in the new disk. After a brief load, the names of the new sectionals available on this disk will be displayed. Press any key to exit and return to Flight Simulator II.

IMPORTANT - If you want to change Scenery Disks or go back to the scenery on the FS2 disk, you must log-in the new disk by pressing CTRL E. If you do not log-in the new disk, you will not get the new scenery and you will risk causing a disk load error.

Using a Scenery Disk with Microsoft Flight Simulator (IBM PC Versions)

Load Flight Simulator in the usual way. When you want to switch to a Scenery Disk, remove the Flight Simulator disk and insert the appropriate Scenery Disk. Press CTRL E. This will log-in the disk. A message will appear on the screen identifying the names of the sectional areas contained on the disk.

The first Scenery Disk log-in automatically checks to see if you have the most recent version of Flight Simulator. If you don't, the program updates Flight Simulator in memory. When this happens, your flight coordinates are set back to the Chicago area. This will only happen on the first Scenery Disk log-in of the session. After the first log-in, your flight coordinates and conditions will carry over as you change Scenery Disks while flying.

After logging in the first Scenery Disk, you can fly or slew through all of the scenery on the disk. You can freely exchange Scenery Disks as you fly to new areas. Press CTRL E to log-in the new area when you switch disks. If you fail to log-in a new Scenery Disk after inserting it, it will be automatically logged in when the disk is accessed. The log-in message will appear after every manual or automatic log-in.

Using the Microsoft Flight Simulator Disk as a Scenery Disk

The Flight Simulator disk contains all of the usual scenery for the Chicago, Seattle, Los Angeles, and New York areas. You can insert this disk and log it in as you would any other Scenery Disk to fly in these areas. This applies to Jet as well as Flight Simulator.

Special Note for IBM PC Flight Simulator Version 2.0

Very few copies of Version 2.0 exist. You most likely have Version 2.1, 2.10, 2.10a, 2.12, or a later version of Microsoft Flight Simulator. Look on the disk label near the serial number area, or look on the first menu page when loading Flight Simulator. If you have Version 2.0, insert the Scenery Disk and press ESC instead of CTRL E for the first log-in of the session. After this first log-in, press CTRL E as usual to log-in new Scenery Disks. Also, never re-insert the Version 2.0 disk to use the Chicago, Seattle, Los Angeles, or New York scenery; you must re-boot Version 2.0 to return to these areas. Version 2.0 also cannot be used as a Scenery Disk for Jet.

Tandy 1000/1200/2000 Flight Simulator

Scenery Disks are compatible with the Tandy 1000/1200/2000 version of Flight Simulator. With this version, always make sure to log-in a new Scenery Disk by pressing CTRL E once the disk has been inserted. No auto-load is available on this version, and failure to log-in a new disk can cause unpredictable results when the disk is accessed after an unlogged disk change.

Special Note for Compaq 286 Users

The 1.2Mbyte floppy drives in the Compaq Deskpro 286 computer cause disk-read errors when using Scenery Disks with SubLOGIC Jet or Microsoft Flight Simulator. Here is the reason why, and how to get around it:

PROBLEM - Whenever you remove a disk from the floppy drive by turning the release lever, the diskette springs out of the drive. This spring action triggers a switch in the drive that informs the disk read/write software that you have just changed the disk. The software assumes that you are about to insert a new disk, and switches to 1.2Mbyte read mode from whatever mode it happens to be in. Jet, Flight Simulator, Scenery Disks (and many other manufacturers programs) are on 360K disks, and a read error results when the Compaq 286 tries to read them as 1.2Mbyte disks.

You can verify this for yourself using the Microsoft Flight Simulator. Boot the disk, then enter and exit the editor several times (ESC key) just to see that everything is functioning properly. Then pop the disk out of the drive, re-insert it, and try to get back into the program editor. You will get a disk read error.

SOLUTION - You can avoid this problem by tricking the disk drive into thinking that you haven't changed disks. Do this by holding the disk in place with your finger while releasing the disk-release lever. **DON'T LET THE DISK POP OUT OF THE DRIVE.** Then manually remove the disk and insert a Scenery Disk (or Flight Simulator as scenery for Jet). The computer will never know that you changed the disk, and everything should work fine. Remember - if you let the disk pop itself out of the drive, the switch will be activated and the drive will go into 1.2Mbyte mode, thus creating errors.

Jet Users

Scenery Disks are compatible with SubLOGIC Jet. Follow the instructions in your Jet manual for loading a Scenery Disk. Jet has no automatic log-in feature, so always make sure you return to the Jet startup menu page before inserting a new Scenery disk. Changing Scenery Disks in the middle of a Jet flight can cause unpredictable results when the disk is accessed after a disk change.

Conclusion

As of this writing there are no fuel or repair facilities available on regular Scenery Disks (although they do occur on STAR Scenery Disks). To refuel, just land at an airport and enter the program editor. Your tanks will be filled and repairs will be made when you exit the editor.

We intend to periodically update and improve our Scenery Disks to include more airports, radio aids, and scenery details as recommended by users. If you know of an airport (or any other detail) that should be included on future versions of these Scenery Disks, please drop us a line and include the required information **ON A SEPARATE SHEET OF PAPER** (so we can store it in our files). Here's what we need to know:

- Airports: NAME, CITY, & STATE
 LATITUDE, LONGITUDE, & ALTITUDE
 HEADING, LENGTH, & WIDTH of each runway
- Buildings, objects: NAME, CITY, & STATE
 LATITUDE, LONGITUDE, & DIMENSIONS

Pictures and postcards are also welcome, especially aerial views. If you're unable to determine the latitude and longitude for the object or airport in question, please provide a description of where the object can be located on a map. All customer correspondence is read and answered (when appropriate). And please; remember to include any scenery suggestions or information on a **SEPARATE** page of your letter.

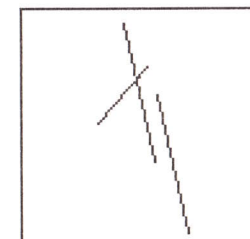
Abilene (VOR)

13431N 12205E
freq. 113.7

Abilene

13384N 12269E
alt. 1791

RWY 17-35	7199 X 147
RWY 17-35	7196 X 147
RWY 4-22	3683 X 98



Acton (VOR)

13330N 13014E
freq. 110.6

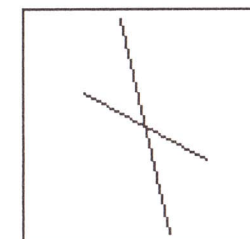
Ada (NDB)

14331N 13461E
freq. 302

Ada

14318N 13446E
alt. 1007

RWY 17-35	4998 X 98
RWY 12-30	3102 X 49



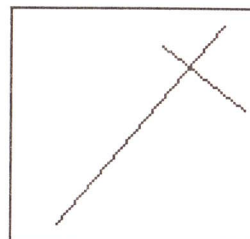
Amarillo (VOR)

14729N 11708E
freq. 117.2

2 - DALLAS - FT WORTH

Amarillo Int'l

14687N 11686E
RWY 4-22 13500 X 298
RWY 13-31 5405 X 49



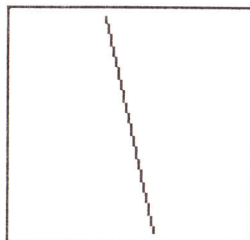
Antlers (NDB)

14042N 13808E
freq. 391

Antlers

14033N 13790E
alt. 574

RWY 17-35 3299 X 59



Arbuckle (NDB)

14064N 13271E
freq. 284

Ardmore (VOR)

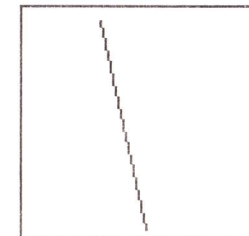
14089N 13260E
freq. 116.7

DALLAS - FT WORTH - 3

Ardmore, Downtown Ardmore

14055N 13260E
alt. 843

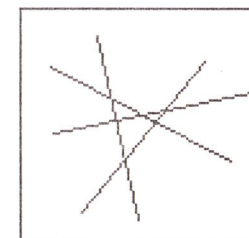
RWY 17-35 4998 X 72



Ardmore

14115N 13303E
alt. 761

RWY 8-26 7222 X 147
RWY 12-30 7199 X 147
RWY 4-22 7038 X 147
RWY 17-35 6878 X 147



Big Spring (VOR)

13460N 11604E
freq. 114.3

Blue Ridge (VOR)

13659N 13521E
freq. 114.9

Borger (VOR)

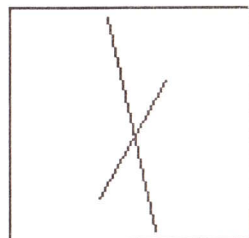
14943N 11828E
freq. 108.6

4 - DALLAS - FT WORTH

Borger, Hutchinson Co.

14876N 11824E
alt. 3054

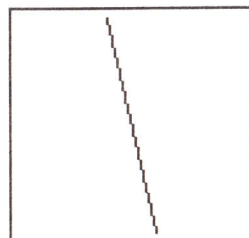
RWY 17-35 6297 X 98
RWY 3-21 3896 X 98



Bowie

13836N 13013E
alt. 1102

RWY 17-35 3617 X 59



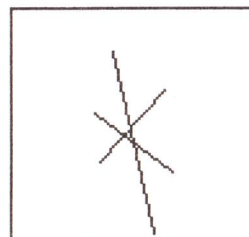
Breckenridge (NDB)

13510N 12575E
freq. 245

Breckenridge, Stephens Co.

13495N 12569E
alt. 1282

RWY 17-35 4598 X 98
RWY 4-22 2374 X 49
RWY 13-31 2374 X 49



Bridgeport (VOR)

13683N 13008E
freq. 116.5

DALLAS - FT WORTH - 5

Brownwood (VOR)

13125N 12506E
freq. 108.6

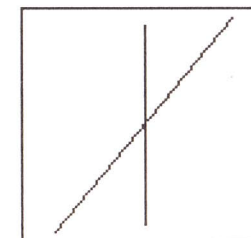
Burns Flat (VOR)

14606N 12571E
freq. 110

Canadian, Hemphill Co.

14918N 12178E
alt. 2385

RWY 4-22 4099 X 72
RWY 0-18 2997 X 29



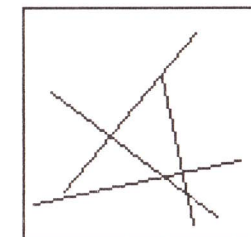
Childress (VOR)

14271N 12142E
freq. 117.6

Childress

14289N 12145E
alt. 1952

RWY 4-22 5999 X 147
RWY 8-26 5999 X 147
RWY 13-31 5999 X 147
RWY 17-35 4496 X 72



Clarendon (NDB)

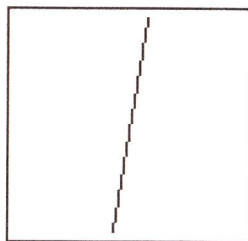
14530N 11962E
freq. 281

6 - DALLAS - FT WORTH

Clarendon

14515N 11965E
alt. 2831

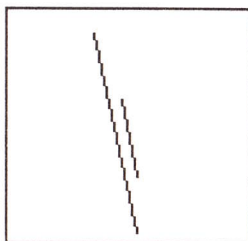
RWY 1-19 3696 X 59



Clinton - Sherman

14636N 12575E
alt. 1922

RWY 17-35 13500 X 147
RWY 17-35 5192 X 72



Coleman (NDB)

13121N 12337E
freq. 385

Corsicana (NDB)

13079N 13487E
freq. 396

Cushing (NDB)

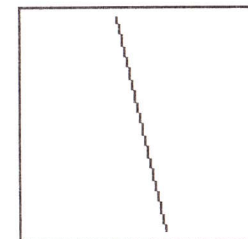
14809N 13462E
freq. 242

DALLAS - FT WORTH - 7

Cushing

14820N 13447E
alt. 915

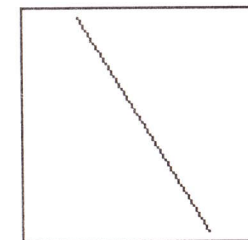
RWY 17-35 5198 X 98



Dallas, Addison

13535N 13324E
alt. 643

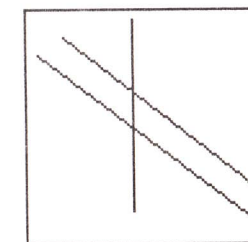
RWY 15-33 7196 X 98



Dallas, Dallas Love

13485N 13316E
alt. 485

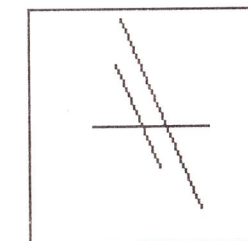
RWY 13-31 8796 X 147
RWY 13-31 7750 X 147
RWY 0-18 6146 X 147



Dallas, Meacham

13489N 13127E
alt. 708

RWY 16-34 7498 X 147
RWY 9-27 4050 X 98
RWY 16-34 3998 X 72

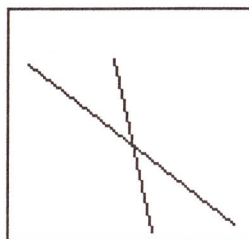


8 - DALLAS - FT WORTH

Dallas, Redbird

13414N 13302E
alt. 659

RWY 13-31 5421 X 147
RWY 17-35 3798 X 147



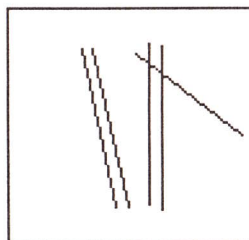
Dallas-Ft.Worth (VOR)

13497N 13264E
freq. 117

Dallas-Ft.Worth Reg.

13510N 13248E
alt. 604

RWY 17-35 11384 X 147
RWY 17-35 11384 X 196
RWY 0-18 11384 X 196
RWY 0-18 11384 X 147
RWY 13-31 8997 X 196



Duncan (VOR)

14189N 12997E
freq. 111

Durant (NDB)

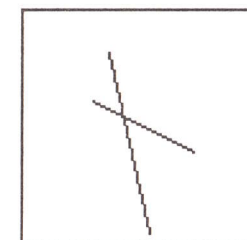
13953N 13531E
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DALLAS - FT WORTH - 9

Durant, Eaker

13945N 13516E
alt. 699

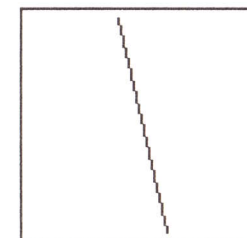
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RWY 12-30 2997 X 72



Eastland

13363N 12588E
alt. 1469

RWY 17-35 4054 X 59



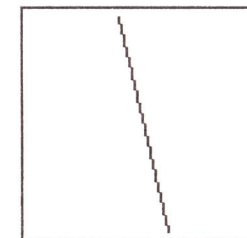
El Reno (NDB)

14671N 13009E
freq. 335

El Reno, Mustang

14649N 12998E
alt. 1414

RWY 17-35 4198 X 59



Farley (NDB)

13333N 11268E
freq. 326

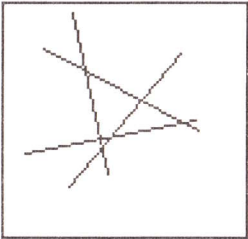
Gainesville (NDB)

13870N 13233E
freq. 330

Gainesville

13840N 13220E
alt. 833

RWY 4-22 4749 X 147
RWY 12-30 4654 X 147
RWY 8-26 4598 X 147
RWY 17-35 4496 X 98



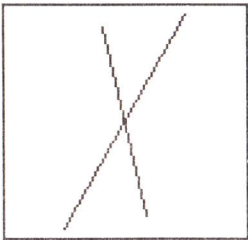
Graham (NDB)

13664N 12717E
freq. 335

Graham

13649N 12709E
alt. 1122

RWY 3-21 4198 X 72
RWY 17-35 3325 X 49



Grindstone Mountain (NDB)

13843N 13022E
freq. 356

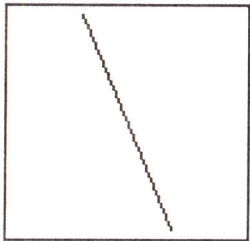
Guthrie (VOR)

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freq. 112.4

Guthrie

14790N 13219E
alt. 1073

RWY 16-34 2997 X 49



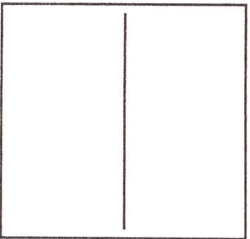
Haske11 (NDB)

13737N 12297E
freq. 407

Haske11

13731N 12296E
alt. 1624

RWY 0-18 3197 X 49



Hemphill CO. (NDB)

14938N 12177E
freq. 400

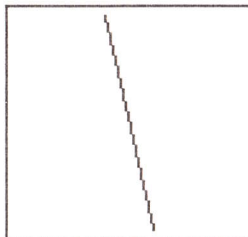
Henryetta (NDB)

14577N 13714E
freq. 267

Henryetta

14562N 13696E
alt. 850

RWY 17-35 3499 X 49



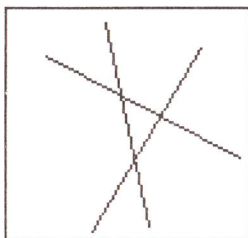
Hobart (VOR)

14439N 12605E
freq. 111.8

Hobart

14479N 12610E
alt. 1565

RWY 3-21 5297 X 147
RWY 12-30 5297 X 147
RWY 17-35 5277 X 147



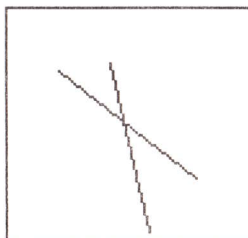
Holdenville (NDB)

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freq. 411

Holdenville

14437N 13542E
alt. 863

RWY 17-35 3250 X 98
RWY 13-31 3197 X 98



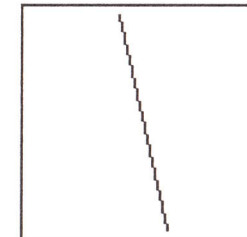
Hudson (NDB)

13435N 13440E
freq. 248

Hudson Muni.

13432N 13426E
alt. 446

RWY 17-35 3998 X 49



Hyman (VOR)

13337N 11725E
freq. 110.4

Kingfisher (VOR)

14810N 13023E
freq. 114.7

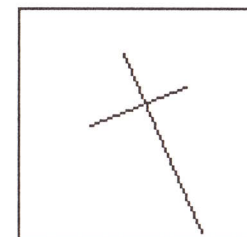
Lamesa (NDB)

13642N 11468E
freq. 338

Lamesa

13639N 11476E
alt. 2998

RWY 16-34 4198 X 72
RWY 7-25 2141 X 49



Lawton (VOR)

14254N 12823E
freq. 109.4

Logan Co. (NDB)

14808N 13231E
freq. 326

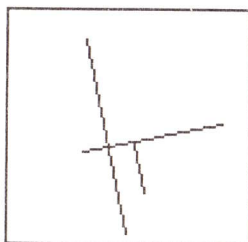
Lubbock (VOR)

14053N 11522E
freq. 109.2

Lubbock

14024N 11563E
alt. 3280

RWY 17-35 11499 X 147
RWY 8-26 7999 X 147
RWY 17-35 2866 X 72



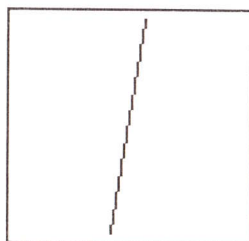
McAlester (VOR)

14329N 13781E
freq. 112

McAlester

14332N 13762E
alt. 771

RWY 1-19 5598 X 98



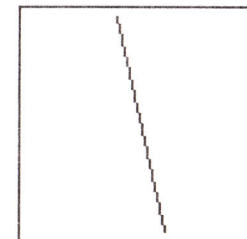
McKinney (NDB)

13621N 13433E
freq. 311

McKinney

13616N 13419E
alt. 581

RWY 17-35 3998 X 72



Midland (VOR)

13338N 11320E
freq. 114.8

Millsap (VOR)

13468N 12902E
freq. 117.7

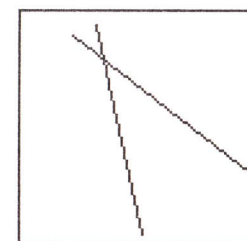
Mineral Wells (NDB)

13497N 12883E
freq. 266

Mineral Wells

13495N 12875E
alt. 964

RWY 13-31 4323 X 98
RWY 17-35 4198 X 98



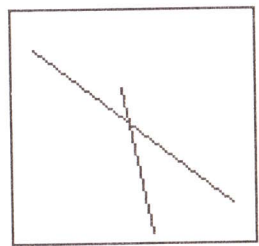
Norman (NDB)

14550N 13187E
freq. 260

Norman, Max Westheimer

14535N 13175E
alt. 1181

RWY 13-31 2997 X 59
RWY 17-35 1797 X 78



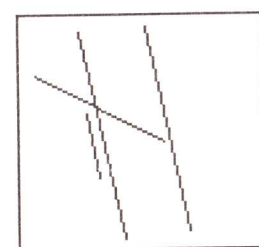
Oklahoma City (VOR)

14645N 13090E
freq. 115

Oklahoma City, Will Rogers World

14600N 13139E
alt. 1296

RWY 17-35 9800 X 147
RWY 17-35 9797 X 147
RWY 12-30 6527 X 147
RWY 17-35 2974 X 72



Okmulgee (VOR)

14699N 13777E
freq. 112.2

Old Rip (NDB)

13355N 12592E
freq. 410

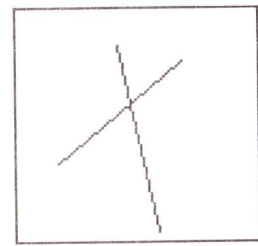
Pampa (NDB)

14836N 11955E
freq. 368

Pampa, Perry Lefors

14818N 11959E
alt. 3244

RWY 17-35 5497 X 98
RWY 5-23 4496 X 72



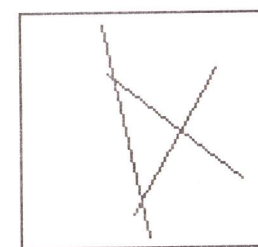
Paris (VOR)

13748N 13864E
freq. 113.6

Paris, Cox

13787N 13850E
alt. 548

RWY 17-35 5999 X 147
RWY 3-21 4624 X 147
RWY 13-31 4621 X 147



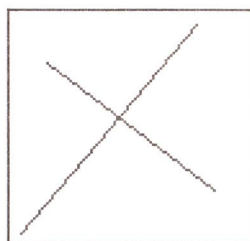
Plainview (VOR)

14216N 11587E
freq. 112.9

Plainview, Hale Co.

14238N 11627E
alt. 3372

RWY 4-22 5195 X 98
RWY 13-31 3998 X 98



Powell (NDB)

13094N 13480E
freq. 344

Quitman (VOR)

13458N 13876E
freq. 114

Redbird (NDB)

13415N 13314E
freq. 287

Sayre (VOR)

14669N 12424E
freq. 115.2

Scotland (NDB)

13951N 12769E
freq. 344

Scurry (VOR)

13302N 13504E
freq. 112.9

Shawn (NDB)

13999N 12784E
freq. 296

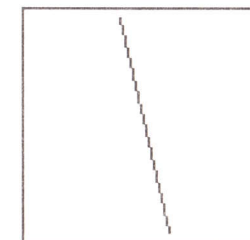
Shawnee (NDB)

14580N 13382E
freq. 227

Shawnee

14564N 13368E
alt. 1079

RWY 17-35 4198 X 147



Stephenville (NDB)

13254N 12819E
freq. 223

Sulphur Springs (VOR)

13600N 13820E
freq. 109

Sweetwater (NDB)

13451N 11984E
freq. 275

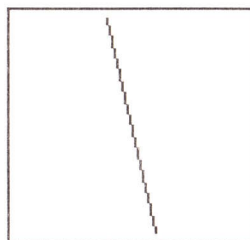
Tahlequah (NDB)

14781N 14089E
freq. 215

Tahlequah

14763N 14067E
alt. 872

RWY 17-35 3197 X 59



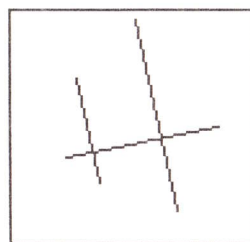
Tulsa (VOR)

14917N 13821E
freq. 114.4

Tulsa Int'l

14913N 13778E
alt. 676

RWY 17-35 9997 X 196
RWY 8-26 7694 X 147
RWY 17-35 5497 X 147



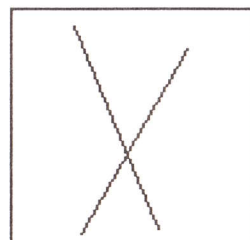
Tuscola (VOR)

13322N 12211E
freq. 111.6

weetwater

13448N 11987E
alt. 2385

RWY 16-34 5841 X 72
RWY 3-21 5648 X 147



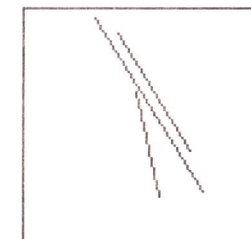
Witchita Falls (VOR)

14039N 12735E
freq. 112.7

Witchita Falls

14024N 12764E
alt. 1014

RWY 15-33 13097 X 298
RWY 15-33 8796 X 147
RWY 17-35 6999 X 147



Acton (VOR)

13330N 13014E
freq. 110.6

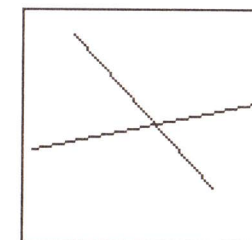
Alexandria (VOR)

12581N 14901E
freq. 116.1

Alexandria, Esler Reg.

12624N 14989E
alt. 112

RWY 8-26 5995 X 147
RWY 14-32 5598 X 147



Andrau (NDB)

12042N 13663E
freq. 269

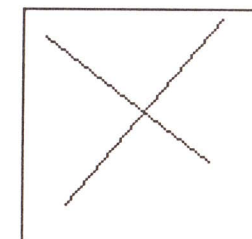
Baton Rouge (VOR)

12202N 15323E
freq. 116.5

Baton Rouge, Ryan

12216N 15381E
alt. 72

RWY 4-22 6897 X 147
RWY 13-31 5795 X 147



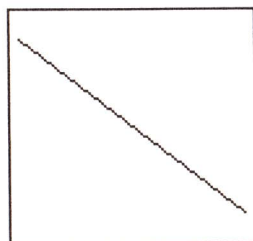
Bay City (NDB)

11728N 13521E
freq. 344

Bay City

11729N 13544E
alt. 46

RWY 13-31 5116 X 72



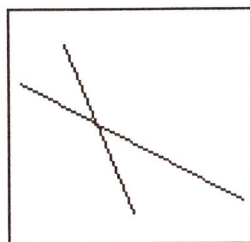
Beaumont (VOR)

12064N 14275E
freq. 114.5

Beaumont / Port Arthur, Jefferson Co.

12065N 14288E
alt. 16

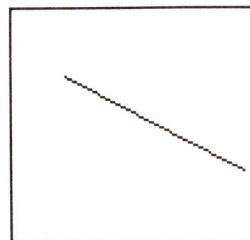
RWY 12-30 6750 X 147
RWY 16-34 5070 X 147



Beaumont

12128N 14221E
alt. 30

RWY 12-30 3598 X 59



Cherokee Co. (NDB)

12956N 13916E
freq. 263

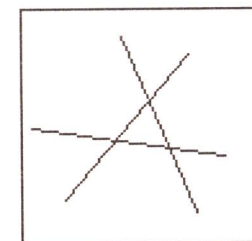
College Station (VOR)

12460N 13400E
freq. 113.3

College Station, Easterwood

12441N 13443E
alt. 318

RWY 10-28 5159 X 147
RWY 16-34 5146 X 147
RWY 4-22 5146 X 147



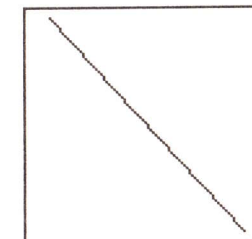
Corsicana (NDB)

13079N 13487E
freq. 396

Corsicana

13065N 13509E
alt. 446

RWY 14-32 4998 X 147



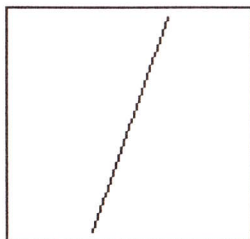
Crocket (NDB)

12720N 13819E
freq. 356

Crockett, Houston Co.

12709N 13838E
alt. 351

RWY 2-20 3257 X 49



Daisetta (VOR)

12198N 14046E
freq. 116.9

Dallas-Ft.Worth (VOR)

13497N 13264E
freq. 117

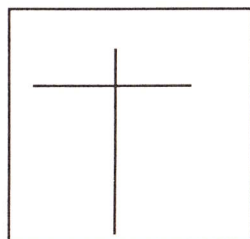
David Hooks (NDB)

12210N 13698E
freq. 521

De Ridder, Beauregard Parish

12421N 14578E
alt. 203

RWY 0-18 5497 X 98
RWY 9-27 4496 X 147



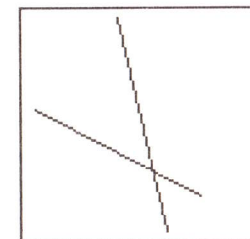
Eagle Lake (VOR)

12045N 13385E
freq. 108.6

Eagle Lake

12019N 13404E
alt. 184

RWY 17-35 3427 X 49
RWY 12-30 2833 X 42



Ellington (VOR)

11969N 13822E
freq. 111

Esler (VOR)

12656N 14975E
freq. 108.8

Galveston (NDB)

11827N 13966E
freq. 296

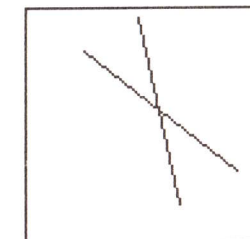
Galveston (NDB)

11833N 13960E
freq. 206

Galveston, Scholes

11806N 13935E
alt. 7

RWY 17-35 5999 X 147
RWY 13-31 5999 X 147



Goodhue (NDB)

12130N 14212E
freq. 368

Hobby (VOR)

11993N 13781E
freq. 117.6

Hodge (NDB)

13003N 14854E
freq. 256

Houston Intercontinental

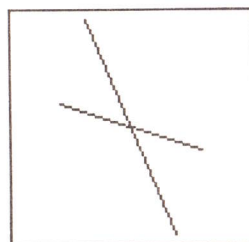
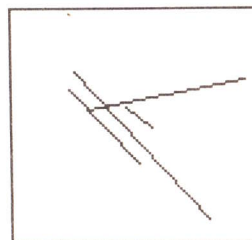
12137N 13786E
alt. 98

RWY 14-32	11998 X 147
RWY 8-26	9400 X 147
RWY 14-32	6035 X 98
RWY 13-31	1981 X 72

Houston, Andrau

12037N 13686E
alt. 79

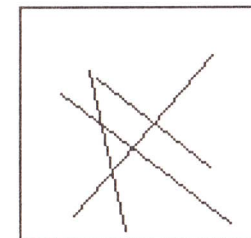
RWY 16-34	4749 X 49
RWY 11-29	2997 X 49



Houston, Hobby

11989N 13799E
alt. 46

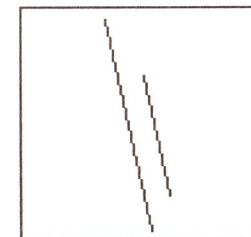
RWY 4-22	7599 X 147
RWY 13-31	7599 X 147
RWY 17-35	5999 X 147
RWY 13-31	5149 X 98



Houston, Hooks Mem.

12176N 13717E
alt. 151

RWY 17-35	6999 X 98
RWY 17-35	3998 X 39



Hudson (NDB)

13435N 13440E
freq. 248

Humble (VOR)

12128N 13770E
freq. 116.6

Huntsville (NDB)

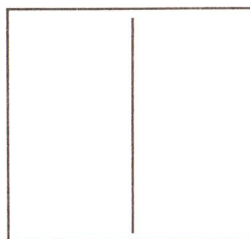
12485N 13721E
freq. 308

8 - HOUSTON

Huntsville

12478N 13741E
alt. 367

RWY 0-18 4998 X 98



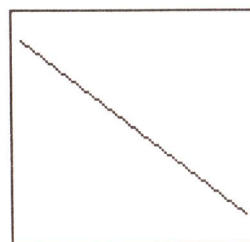
Industry (VOR)

12185N 13310E
freq. 110.2

Jacksonville, Cherokee Co.

12943N 13933E
alt. 676

RWY 13-31 4998 X 72



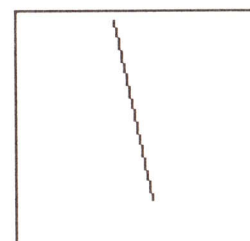
Jasper (NDB)

12508N 14311E
freq. 344

Jasper Co. - Bell Fld.

12473N 14324E
alt. 223

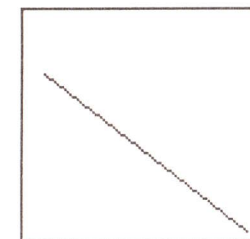
RWY 17-35 4149 X 68



Kountze - Silsbee, Hawthorne Fld.

12242N 14217E
alt. 75

RWY 13-31 3798 X 72



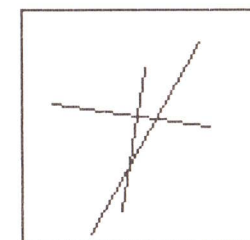
Lafayette (VOR)

12077N 15050E
freq. 110.8

Lafayette Reg.

12098N 15064E
alt. 43

RWY 3-21 7648 X 147
RWY 10-28 5398 X 147
RWY 1-19 5067 X 147



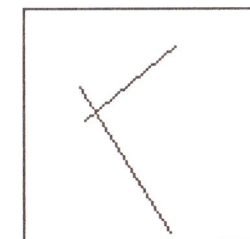
Lake Charles (VOR)

12116N 14625E
freq. 113.4

Lake Charles

12112N 14594E
alt. 16

RWY 15-33 6497 X 147
RWY 5-23 4398 X 98



Lakeside (NDB)

12084N 13637E
freq. 249

Lee Co. (NDB)

12301N 13166E
freq. 385

Leona (VOR)

12664N 13597E
freq. 110.8

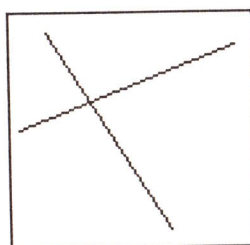
Lufkin (VOR)

12626N 14066E
freq. 112.1

Lufkin, Angelina Co.

12649N 14075E
alt. 289

RWY 15-33 4513 X 98
RWY 7-25 4398 X 98



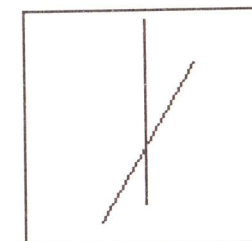
Mansfield (NDB)

12984N 14466E
freq. 414

Mansfield, Desoto Parish

12971N 14478E
alt. 325

RWY 3-21 5067 X 147
RWY 0-18 5067 X 72



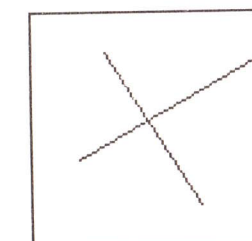
Nacogdoches (NDB)

12832N 14084E
freq. 391

Nacogdoches, East Texas Reg.

12796N 14105E
alt. 371

RWY 6-24 4198 X 147
RWY 15-33 3598 X 72



Natchez (VOR)

12696N 15364E
freq. 110

Natchez-Adams Co., Hardy-Anders Fld

12683N 15365E
alt. 272

RWY 13-31 5497 X 147
RWY 17-35 4998 X 147



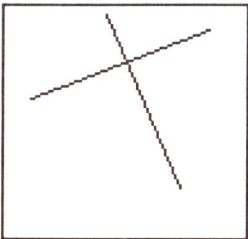
Natchitoches (NDB)

12810N 14698E
freq. 407

Natchitoches

12798N 14707E
alt. 118

RWY 16-34 4073 X 147
RWY 7-25 3998 X 147



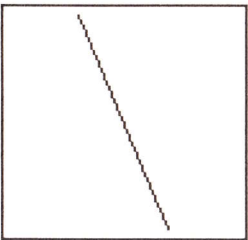
Navasota (VOR)

12305N 13518E
freq. 115.9

New Iberia, Acadiana

12025N 15087E
alt. 23

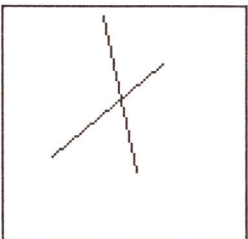
RWY 16-34 7999 X 196



Opelousas, St.Landry Parish

12257N 15026E
alt. 72

RWY 17-35 4549 X 98
RWY 5-23 4047 X 98



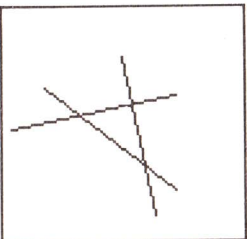
Palacios (VOR)

11654N 13341E
freq. 117.3

Palacios

11643N 13384E
alt. 16

RWY 8-26 4998 X 147
RWY 13-31 4998 X 147
RWY 17-35 4998 X 147



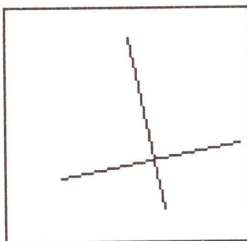
Palestine (NDB)

12936N 13730E
freq. 375

Palestine

12924N 13750E
alt. 423

RWY 8-26 3998 X 72
RWY 17-35 3998 X 72



Parish (NDB)

12392N 14567E
freq. 385

Pine (NDB)

12470N 14307E
freq. 332

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Polk (VOR)

12544N 14626E
freq. 108.4

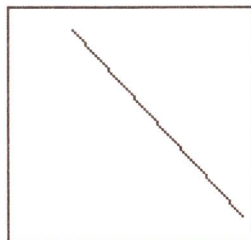
Port Lavaca (NDB)

11628N 13191E
freq. 515

Port Lavaca, Calhoun Co.

11631N 13217E
alt. 33

RWY 14-32 3998 X 72



Powell (NDB)

13094N 13480E
freq. 344

Quitman (VOR)

13458N 13876E
freq. 114

Redbird (NDB)

13415N 13314E
freq. 287

Robinson (NDB)

12874N 13187E
freq. 400

Rockport (NDB)

11404N 13044E
freq. 391

Sabine Pass (VOR)

11954N 14250E
freq. 115.4

Scholes (VOR)

11840N 13871E
freq. 112.8

Scurry (VOR)

13302N 13504E
freq. 112.9

Temple (VOR)

12763N 13043E
freq. 110.4

Tomball (NDB)

12189N 13696E
freq. 408

Victoria (VOR)

11746N 13091E
freq. 109

Waco (VOR)

12955N 13122E
freq. 115.3

16 - HOUSTON

White Lake (VOR)

11878N	14881E
freq.	111.4

Yoakum (NDB)

11926N	13065E
freq.	350

SAN ANTONIO AND BROWNSVILLE - 1

Abilene (VOR)

13431N 12205E
freq. 113.7

Acton (VOR)

13330N 13014E
freq. 110.6

Alice (VOR)

11287N 12652E
freq. 114.5

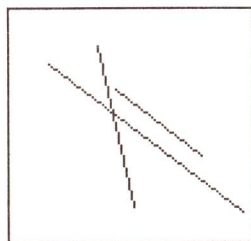
Austin (VOR)

12376N 12896E
freq. 114.6

Austin, Mueller

12376N 12909E
alt. 633

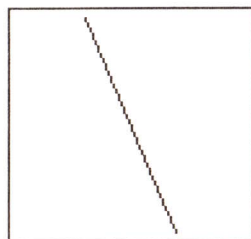
RWY 13-31	7268 X 147
RWY 17-35	5005 X 147
RWY 13-31	3168 X 72



Big Lake, Reagan Co.

12937N 11554E
alt. 2703

RWY 16-34 4027 X 49



2 - SAN ANTONIO AND BROWNSVILLE

Big Spring (VOR)

13460N 11604E
freq. 114.3

Brooks Co. (NDB)

11060N 12589E
freq. 353

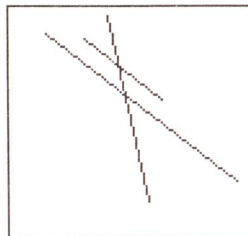
Brownsville (VOR)

10475N 12825E
freq. 116.3

Brownsville/South Padre Island Int'l

10476N 12808E
alt. 23

RWY 13-31 7399 X 147
RWY 17-35 5999 X 147
RWY 13-31 2997 X 72



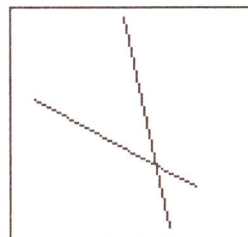
Brownwood (VOR)

13125N 12506E
freq. 108.6

Brownwood

13069N 12508E
alt. 1387

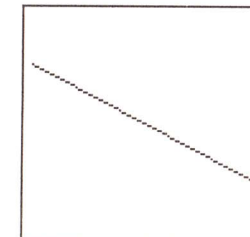
RWY 17-35 5595 X 147
RWY 12-30 4598 X 98



Caprizo Springs, Dimmit Co.

11708N 12014E
alt. 620

RWY 12-30 5297 X 72



Center Point (VOR)

12281N 12306E
freq. 117.5

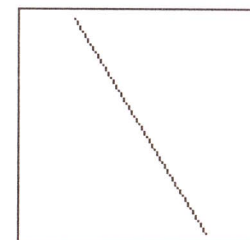
Coleman (NDB)

13121N 12337E
freq. 385

Coleman

13111N 12349E
alt. 1696

RWY 15-33 3798 X 72



College Station (VOR)

12460N 13400E
freq. 113.3

Conor (NDB)

11313N 12827E
freq. 382

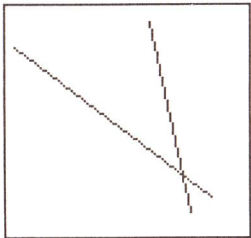
Corpus Christi (VOR)

11338N 12882E
freq. 115.5

Corpus Christi

11283N 12854E
alt. 43

RWY 13-31 7507 X 147
RWY 17-35 6077 X 147



Cotulla (VOR)

11642N 12264E
freq. 115.8

Dallas-Ft.Worth (VOR)

13497N 13264E
freq. 117

Dimmit Co. (NDB)

11703N 11999E
freq. 343

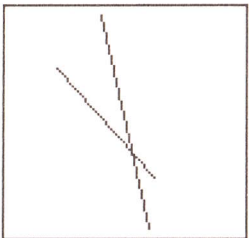
Eagle Lake (VOR)

12045N 13385E
freq. 108.6

Falfurrias, Brooks Co.

11063N 12592E
alt. 112

RWY 17-35 4998 X 72
RWY 14-32 3299 X 68



Farley (NDB)

13333N 11268E
freq. 326

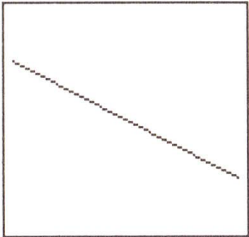
Fort Stockton (VOR)

12923N 10959E
freq. 112.8

Fort Stockton-Pecos Co.

12899N 11008E
alt. 3011

RWY 12-30 7498 X 98



Harlingen (VOR)

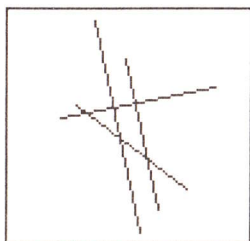
10650N 12677E
freq. 108.8

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Harlingen, Rio Grande Valley Int'l

10625N 12732E
alt. 36

RWY 17-35 8298 X 147
RWY 17-35 5949 X 147
RWY 8-26 5743 X 147
RWY 13-31 5254 X 147



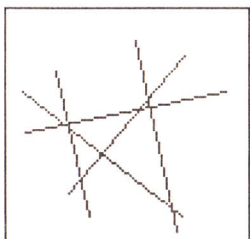
Honda (NDB)

12039N 12294E
freq. 329

Hondo

12037N 12303E
alt. 928

RWY 8-26 6097 X 147
RWY 13-31 6097 X 147
RWY 17-35 6097 X 147
RWY 4-22 5497 X 147
RWY 17-35 4696 X 147



Hyman (VOR)

13337N 11721E
freq. 110.4

Industry (VOR)

12185N 13310E
freq. 110.2

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Junction (VOR)

12603N 12117E
freq. 116

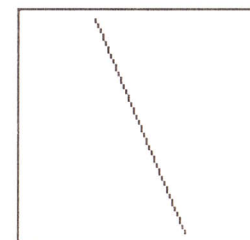
Lampasas (VOR)

12782N 12774E
freq. 112.5

Lampasas

12741N 12752E
alt. 1214

RWY 16-34 3808 X 59



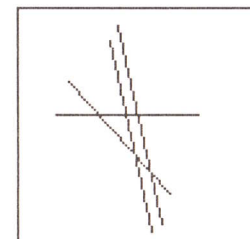
Laredo (VOR)

11234N 12100E
freq. 117.4

Laredo Int'l

11263N 12098E
alt. 508

RWY 17-35 8199 X 147
RWY 17-35 7809 X 147
RWY 14-32 5923 X 147
RWY 9-27 5431 X 147



Laughlin (VOR)

12113N 11688E
freq. 114.4

Lee Co. (NDB)

12301N 13166E
freq. 385

Llano (VOR)

12641N 12513E
freq. 108.2

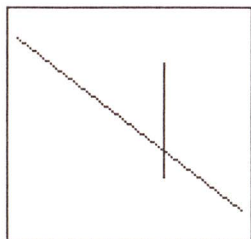
McAllen (VOR)

10617N 12497E
freq. 109.8

McAllen, Miller Int'l

10621N 12503E
alt. 108

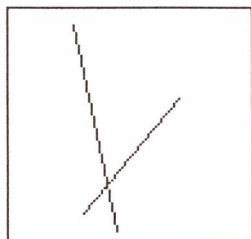
RWY 13-31 7107 X 147
RWY 0-18 2984 X 59



McGregor

12871N 13097E
alt. 590

RWY 17-35 5497 X 147
RWY 4-22 3778 X 55



Midland (VOR)

13338N 11320E
freq. 114.8

Millsap (VOR)

13468N 12902E
freq. 117.7

Mineral Wells (NDB)

13497N 12883E
freq. 266

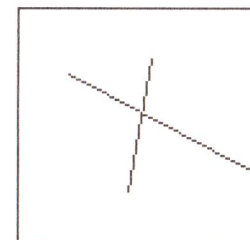
Mitchell (NDB)

10449N 12824E
freq. 375

Monahans, Hurd Mem.

13180N 11054E
alt. 2614

RWY 12-30 4267 X 72
RWY 1-19 2929 X 72



Navy Corpus (VOR)

11239N 12931E
freq. 114

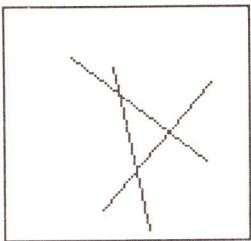
New Braunfels (NDB)

12136N 12740E
freq. 212

New Braunfels

12137N 12746E
alt. 646

RWY 17-35 5369 X 147
RWY 4-22 5349 X 147
RWY 13-31 5359 X 98



Old Rip (NDB)

13355N 12592E
freq. 410

Palacios (VOR)

11654N 13341E
freq. 117.3

Port Lavaca (NDB)

11628N 13191E
freq. 515

Randolf (VOR)

12065N 12638E
freq. 112.3

Reagan (NDB)

12943N 11536E
freq. 341

Redbird (NDB)

13415N 13314E
freq. 287

Robinson (NDB)

12874N 13187E
freq. 400

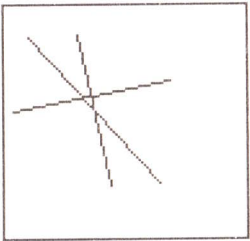
Rockport (NDB)

11404N 13044E
freq. 391

Rockport, Arkansas Co.

11402N 13046E
alt. 26

RWY 14-32 5598 X 147
RWY 8-26 4496 X 147
RWY 17-35 4496 X 147



Rocksprings (VOR)

12372N 11903E
freq. 111.2

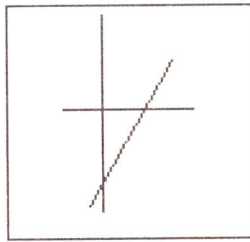
San Angelo (VOR)

12970N 11923E
freq. 115.1

San Angelo, Mathis

12958N 11926E
alt. 1916

RWY 0-18 6917 X 147
RWY 3-21 5936 X 147
RWY 9-27 4398 X 72



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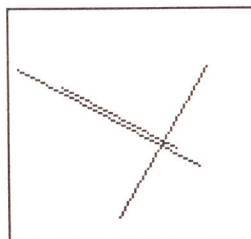
San Antonio (VOR)

12126N 12576E
freq. 116.8

San Antonio Int'l

12083N 12578E
alt. 810

RWY 12-30 8501 X 147
RWY 3-21 7504 X 147
RWY 12-30 5434 X 98



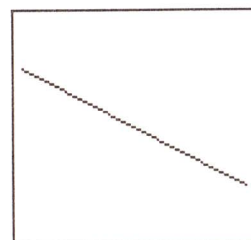
Sanora (NDB)

12638N 11801E
freq. 371

Seguin, Geronimo Fld.

12086N 12760E
alt. 558

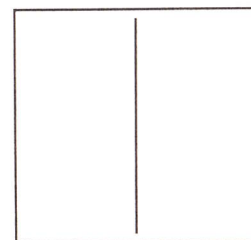
RWY 12-30 3667 X 42



Sonora

12633N 11818E
alt. 2139

RWY 0-18 3676 X 72



SAN ANTONIO AND BROWNSVILLE - 13

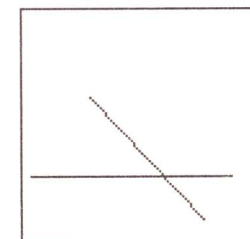
Stephenville (NDB)

13254N 12819E
freq. 223

Stinson

11999N 12569E
alt. 577

RWY 9-27 4824 X 98
RWY 14-32 4126 X 98



Stonewall (VOR)

12381N 12512E
freq. 113.1

Sweetwater (NDB)

13451N 11984E
freq. 275

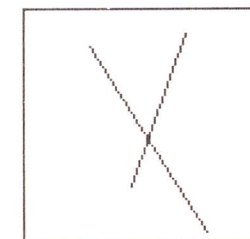
Temple (VOR)

12763N 13043E
freq. 110.4

Temple, Draughon-Miller

12732N 13046E
alt. 682

RWY 15-33 6300 X 147
RWY 2-20 4739 X 147



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Three Rivers (VOR)

11618N 12637E
freq. 111.4

Tuscola (VOR)

13322N 12211E
freq. 111.6

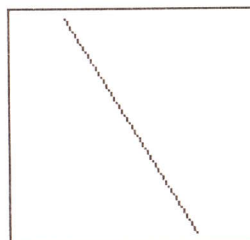
Uvalde (NDB)

11982N 12073E
freq. 281

Uvalde, Garner

12000N 12084E
alt. 941

RWY 15-33 5247 X 98



Victoria (VOR)

11746N 13091E
freq. 109

Waco (VOR)

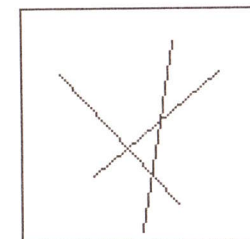
12955N 13122E
freq. 115.3

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Waco - Madison Cooper

12922N 13134E
alt. 515

RWY 1-19	6596 X 147
RWY 14-32	5897 X 147
RWY 5-23	5497 X 147



Yoakum (NDB)

11926N 13065E
freq. 350

Yoakum Muni.

11930N 13064E
alt. 367

RWY 13-31 3447 X 59

