Carlson UPdate

SurvCADD 12.6/13.2 Ships

The powerful new release of SurvCADD, Version 12.6/13.2, began shipping January 20, 1997. All SurvCADD users whose maintenance programs were initiated on or after January 1, 1996 will be entitled to the new release. There are significant improvements in the Cogo-Design, DTM-Contour, Section-Profile and Mining Modules. Here is a brief summary of the highlights:

Cogo-Design: Lot files have been added for both parcels and centerlines. These files can be used to generate lot summaries and to re-plot one or more lots with full annotation. Lots can also be carved out automatically at any desired frontage or acreage between right-of-way and rear lot lines. A new "note" field has been added for lengthy notes on points as an addition to descriptions. Field-to-finish allows for multi-point curves (using a PC to start, PT to end concept). We have utilized AutoCAD's new ARX tools in 13.2 Windows, including "reactors". Points that are moved will automatically update in the coordinate file. Bearings and distances will update automatically when lines are moved. The reactors can be toggled on or off. NADCON is used to transform coordinates between State Plane 27 and 83. Bad entries are detected in traverse and sideshot, new points will optionally "zoom center", and backsights and setups are identified with phantom lines. An attractive, user-defined, point table has been added.

DTM-Contour: The ARX tools make Triangulate and Contour, already the fastest inside AutoCAD, 2 times faster! Contouring in 13.2 for Windows is now actually faster than version 12.6 for DOS! A new polynomial smoothing has been added (in addition to Bezier and spline). Contours can be colored by elevation and labeled by distance. Shrink/swell factors have been added to grid-based volume routines. Predefined boundaries can be stored for re-

peated contouring and volumes. Pad design can use a dynamic template applied to a 3D polyline to create roads, embankments, contour cuts and diversion ditches.

Section-Profile: Template design is graphic and easy, includes transitions and super, and leads to quantities for all template elements including road paving, subgrades and concrete in curbs and sidewalks. The typical section can be plotted with one click. Profiles can be applied to centerlines to produce centerline and offset points at correct design elevations. Input-Edit Profile offers design feedback by presenting elevations on check stations. Cross pipe profiles can be entered and will appear in profile view. Draw profile will "cookie-cut" multiple plan and profile sheets in paper space, capturing the corresponding plan view automatically. Multiple profiles can be plotted in one command. Right-of-way files can be created and drawn with user-defined station/offset labeling. Input-Edit Section file includes view of section in dialog. Expanded section and centerline reporting.

Mining: Unlimited strata attributes in coreholes. Strata beds can be identified as a means of organizing several strata and "splits" into one zone for modeling. This allows the substrata within the bed to have duplicated names. Seam stacking (conformance) and pinchout control have been added. Grid files for strata bottom elevation and quality can be saved and "auto-run" in mountaintop removal and fence diagram. Files can be manipulated at individual grid points or within polylines. A formal link to SB-Slope for stability analysis was added.

Advanced Mine Module: A new, optional module including both surface and underground timing routines, as well as dozer push simulation for multi-seam surface mines. Modeling methods can be studied using "residual analysis". Strata entry includes new special attributes for Ferm codes and Horizon codes, which can identify reliability of data. Pits can be laid out by width

or rate of mining and then auto-assigned quantities and qualities leading to colored timing maps and full timing reports. A "cascading" corehole spreadsheet in Windows 13.2 allows for easy "3 in 1" editing and entry of corehole data, showing all coreholes, strata within a selected corehole and attributes within a selected strata.

Hydrology: Automatic TIN-based watershed delineation. A complete sewer spreadsheet based in Excel that works with 13.2 Windows and allows for revision of storm sewer designs either on-screen in a dialog format or in the Excel spreadsheet editor. The Q=CIA rational method now includes detailed C-factor selection options within runoff analysis.

General Improvements: Many scale and style defaults used in the course of design are now saved with a drawing as an associated "ini" file. Drawing recall restores design conditions as well as data files (such as coordinate files and profiles, etc.). These become defaults as design continues. Configure SurvCADD allows for saving over 200 preferred parameter settings. The report viewer now has an append option. We added more polyline editing options, such as Add Intersection Points, which adds vertices to lines or polylines at intersections with other lines or polylines. With a dozen new polyline modify features, SurvCADD retains its position as the premier program for polyline manipulation and design.

Expansion into GPS & Laser Applications

The market for GPS products continues to expand, and Carlson Software has responded with GPS software that now reads Ashtech, Trimble and Laser Atlanta equipment. Carlson Software has developed *SurvStar*, a full-featured GPS software package. SurvStar communicates directly with Ashtech Z-12 and Sensor "real-time" (RTK) GPS equipment, and now also communicates with the Trimble 4000 series RTK hardware. SurvStar improves on the standard programs from Ashtech and Trimble by offering SurvCogo, our full Cogo program, and by including "tin"-based and advanced template-based grade staking. SurvStar works on the Husky FS2, which is a "military spec" DOS data collector/computer, weatherproof and dustproof and rated to below zero temperatures. Since the Husky FS2 has 2 serial ports, we can use the second port to connect to a laser gun, specifically Laser Atlanta's "Advantage". The gun is mounted on the same pole as the GPS rover antenna, and is used to shoot hard-to-reach points like the base of cliffs or buildings, with the new points storing automatically on the Husky.

The concept of real-time GPS is simple. A 2-receiver system involves a base and a rover that include antennas that receive satellite information and radios that relay the information between the base and the rover, allowing split-second calculation of the rover position. The calculation typically provides centimeter accuracy both horizontally and vertically, subject to normal good satellite conditions. Of the 24 GPS satellites circling the earth, you need 5 or more for good results. If you have less than 5 because of trees or buildings, you "lose lock", and must wait a minute or two to regain lock when you are once again receiving 5 or more satellites. The accuracy and cost savings versus conventional surveying can be dramatic. One company using Ashtech and SurvStar reported aligning to a state plane monument, then tieing into another monument 4 miles away within 0.2' (1:100,000). Because SurvStar reports grid north and true grid scale, a single alignment point was all that was necessary to achieve this accuracy.

Using SurvStar, surveyors can collect points for alignments, control and topo work by simply pressing a button on the Husky. Each point can be coded with text. And points can be staked out with GPS. But this is where the similarity to total stations ends. GPS data collection requires only one person walking with the rover unit. Points can be collected at a rate of one every few seconds. In fact, points can stream in as a person walks or drives the site in a vehicle. Thousands of points can be collected in one day in this fashion. Stakeout can be accomplished by loading SurvCADD grid files, tin files or template files into the Husky--leading to instant and accurate cut/fill values at any randomly selected point. There is no need for a second setup as long as the rover stays within radio communication with the base, which is typically a 6-mile radius from the base. The points are stored in our SurvCADD ".CRD" format--no conversions needed. The largest job can be downloaded to the computer in less than 10 seconds with a program called "HCOM". Then the points are plotted to the screen or used to generate line work and corner symbols using "field-to-finish".

Using the Laser Atlanta laser gun, offset points can be taken without prisms. Accuracy is in the 0.5' to 1.0' range. This device applies to tree surveys, GIS inventory work, construction and mining--in fact to any work where it is dangerous, time-consuming or impossible to successfully occupy the target point. For GIS work (surveying light poles, manholes, water valves--virtually any map features), SurvStar includes a user-defined prompting sequence for any GIS application. The sequence of questions (eg. size of manhole, depth of manhole, material of manhole, # of steps, etc.) is stored as a ".gis" file, and the results of the inventory are stored to disk in the "notes" field that has been added in the new SurvCADD 12.6/13.2.

A 2-unit GPS system typically runs from $48,000 to $65,000 depending on features. It costs more to add "post-processing", since RAM must be added to the receivers and post-processing software is needed. As of May 10, 1997, we have two "demo" systems in stock available for $40,000. The Laser Atlanta "Advantage" can be purchased for approximately $3500. Carlson Software is a direct dealer for Ashtech and Laser Atlanta, but prefers to work with the many regional Ashtech dealers such as Survey Instruments Systems of Walled Lake, Michigan, Anderson Instrument of Canton, Ohio, Accutech of Kansas City and Survey Solutions of Denver. SurvStar now works on both Ashtech and Trimble equipment and will soon be adapted to work on Wild/Leica and include full total station data collection on all major brands of equipment. SurvStar costs $2995, or $4995 with a Husky FS2 with 2 mb of RAM.

Ashtech GPS Unit

AutoCAD R14 Ships

Over two years in the making, the long awaited arrival of AutoCAD Release 14 is here, and it was worth the wait. First shipping date was May 9th. The first and foremost point to make it that it requires *Windows95™* or *WindowsNT™* to run. There will be no more DOS or UNIX versions. Even Windows 3.11 is out. The drawing format has changed again, however, R14 can save a drawing in a R12 or R13 format.

Interface: The interface looks and feels pretty much like Release 13. It now includes explorer type dialogs for file operations, overhauled layer control dialog and new Right-Button menus on grip editing.

Performance: The area that matters most to the many of you that have huge drawings, has been significantly improved. Display operations are faster, including a zoom extents without a regen. Editing operations have been improved, in areas like copying and moving large chunks of the drawing. The most significant change is smaller drawings due to a new lightweight polyline and new hatch objects. Hatching is no longer an anonymous block that takes up room in the drawing, but rather a lean definition of what is to be hatched. The hatch change alone can make megabytes of difference in some drawings. Improved performance in file loading combined with smaller drawings will make for significantly faster loading of drawings. An example of file sizes are shown in the adjacent graph, the file was a large topographic map with thousands of polylines.

Reduced Memory Footprint: Immediately upon startup, you will have approximately 4mb additional memory for your drawing. A lot of multi-platform baggage was removed, and demand loading was added. This means that certain parts of the program, like 3D solid modeling, don't get loaded until used. If your machine runs R13 Windows fine now, there is no need to upgrade your machine.

Paperspace Performance: Regens not required for display operations, as well as the addition of Real-Time Zoom and Pan.

Object Property Editing Toolbar: Now you can select objects, and change their properties by choosing the desired layer, color, and linetype from the popdowns in the toolbar.

Quick Precision Drawing: New tools to help users draw more precisely. The addition of AutoSnap™ allows you to visually preview and confirm snap points before picking points. Temporary markers of different shapes, as well as snap tips, magnets, cycling make it much easier and accurate.

Layer & Linetype Dialogs: A major user interface overhaul, these have been combined in a single dialog with two tabs. You can now delete a layer in the dialog assuming it is empty.

On-Line Help: You will find the on-line help expanded to include every thing from the printed documentation.

Command Line Editing: Like the DOSKEY for the MS-DOS™ prompt, you can now uses the up/down arrows to scroll to previous command, use the left/right arrows to make changes, then issue them as commands.

Plot Preview: A new option from the File pulldown shows how the drawing would look if plotted. It uses a white sheet for a more accurate representation.

Drawing File Size (MB)
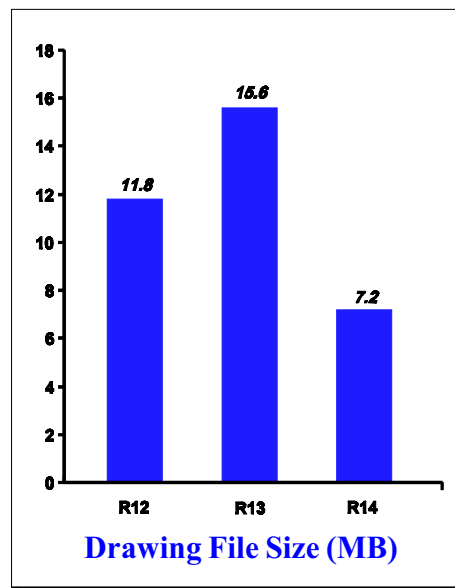
New MTEXT Editor: A new faster multi-line text editor allows logical editing of MTEXT objects. It looks and feels like a mini word processor with more control over the text with functions like find & replace.

TrueType Improvements: Support was added for bold, italic, and underscore of TrueType text. It displays significantly faster and looks smooth at all zoom levels.

Display Order Control: You can move objects to the top or bottom, or specifiy that a selection set of objects should be over or under another object.

Xref Manager: R14 provides a new dialog for managing Xrefs. It can display a tree-like hierarchial view or a sortable list of xref's. Displayed properties are size, type, path, and load status. You can attach, de-tach, reload, unload, bind, and change paths from the dialog.

XRef Clipping: Xref geometry can now be clipped with the XCLIP command. Clipping can be specified by a rectangle, polygon, or polyline. The clipping boundary can be made invisible, but most importantly the areas clipped out do not take up memory.

Xref Layer Indices: If layers in an Xref have been frozen or turned off, they do not take up memory in the drawing editor.

Hybrid Raster/Vector Drawings: This is a major addition to AutoCAD. Now you can insert raster images of BMP, DIB, FLC, FLI, GIF, GP4, JPG, MIL, PCT, PCX, PNG, RLE, TST, TGA, & TIF formats anywhere in your drawing. From the smallest logo to the largest scanned map, aerial photo, or satellite image, the rasters display clean and extremely fast. You can even rotate, scale, and control contrast. An Image Manager dialog shows the size, status, type, and file of each image.

Solid Fill: There is a new fill 'pattern' in hatching for solid fill. It means that any AutoCAD geometry can be filled as easily as hatching. It produces the leanest of files since only the definition is stored, and since it is associative, any editing operation automatically changes and updates the fill.

Internet Tools: Drawing Web Format (DWF) files can be output directly. Internet utilities allow you to create links in your drawing.

Template Drawings: R14 has over 25 built in templates in various sheet sizes, orientations, and formats.

*User Profiles:* Enhances the management of multiple users/needs on a single station.

Network Printing: R14 can now be configured to plot directly to a network queue.

License Manager: No more hardware lock, instead uses TCP/IP based license manager.

Summary: This is the best AutoCAD ever. If you have been holding out with Release 12, now is the time to upgrade. Even R13 users can gain significantly in performance and features. This one is not to be missed.

SurvCADD for R14

By the time you read this, we should have completed SurvCADD 14.0 for AutoCAD Release 14 and AutoCAD Map 2.0. Autodesk has been known to change the rules at the last minute, which means we must wait until AutoCAD R14 shipped to begin finalizing SurvCADD. More information on SurvCADD 14.0 coming soon.
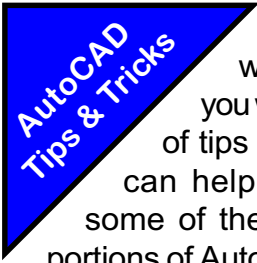
In this column we try to present you with a collection of tips and tricks that can help you manage some of the less intuitive portions of AutoCAD.

Why isn't my layer table sorted?

If you begin working with a large number of layers (around 200), you may notice that the layers are not sorted in the layer dialog. Instead they are shown in the order they were created. AutoCAD uses a system variable MAXSORT to control how many layers to sort on layer control as well as how many files to sort on file open. Simply type in MAXSORT at the command prompt and put in a numeric value larger than the default value of 200. This value is stored in the configuration files and won't need to be reentered in your next drawing.

Don't Plot That Layer!

A little known trick in AutoCAD that has been around for the longest time is a layer name that won't plot regardless of its status. Create a layer in your drawing called **DEFPOINTS**. Use it to place notes to yourself, construction lines, etc. It also an excellent layer to put paper space viewports into, since the frames don't plot.

Why won't my linetypes display!

Sometimes it seems that no matter how you try, you can't get line types with breaks to show the breaks. First thing to remember is that 3D polylines in AutoCAD cannot display a line type, nor can they have width for that matter. However, most other objects should if things are set right.

First check the value of LTSCALE, this master control variable determines the scaling of the gaps in linetypes. You may find this variable set to 1.0, which would not show breaks on a map. Enter LTSCALE at the command prompt and put in a value that is 50% to 66% of the scale at which you would plot the map. For example, if you would plot the drawing at 1"=50', you should put in a value between 25-35 for LTSCALE.

If LTSCALE doesn't set things straight, there is a possibility that your geometry has a CONTINUOUS linetype set to each ob-

ject, in which case it won't take on the linetype of the layer on which it is assigned. Simply issue the CHPROP command, select the geometry, type LT for linetype, and enter BYLAYER for the value.

If this still doesn't display the linetype's properly, you probably have polylines with vertices that are close together. To correct this use DDMODIFY, select the polyline, and turn on the LTGEN toggle in the dialog.

The Art of Masking

Users often want to mask, or blot out, the geometry behind title blocks, text, or vicinity maps. This is often done by trimming the actual geometry to form a hole. This presents a problem as the object to mask gets moved, creating a hole in one spot with the need to trim another. Here is a better approach that works well on raster inkjets plotters. The example given is for a rectangular title block on a topographic map.

First position your title block and text clearly away from the geometry of the drawing. Then issue the SOLID command. Pick the lower left, lower right, upper left, and upper right corners. Next use the CHPROP command to change the color of the last object to color number 255. This is very nearly white on most raster plotters. Next use the Solid Fill Float command (SFF) and window off all title block geometry. R13+ users may want to group the title block and background with the GROUP command. The final step is to move the title block and mask to its place over the geometry of the drawing.

It's All Relative

Frequently in designating points in AutoCAD & SurvCADD, you need to specify the relative position of the next point. There are several ways to do this:

Relative Cartesian: You simply specify the X/Y difference as positive or negative values. The following example indicates the next point is 12 units to the right (positive X) and 6 units down (negative Y).

To Point: @12,-6

Relative Polar: You specify the distance and angle to the next point. The following example indicates the next point 15 units away at a 45 degree angle.

To Point: @15<45

Relative Cylindrical: Much like relative polar except you have the ability to designate the amount of rise or drop at the new point. The following example indicates the

next point 15 units away at a 45 degree angle, but also is 6 units lower.

To Point: @15<45,-6

Relative Spherical: Much like relative cylindrical except the rise or drop is determined by an angle. The following example indicates the next point 15 horizontal units away at a 45 degree angle in plan view, but also lifts 12 degrees in the XY plane.

To Point: @15<45<12

What happened to my PLOT/FILE dialogs?

You may occasionally find yourself in a situation where the NEW, OPEN, and SAVE commands do not provide a dialog. Simply enter FILEDIA at the command prompt and enter a value of 1. If you attempt to PLOT and fail to get a dialog, simply enter CMDDIA at the command prompt and enter a value of 1.

TREEDEPTH?

Users with HUGE drawings may want to consider changing the value of the TREEDEPTH variable. It controls the AutoCAD Oct-Tree Spatial Index, which specifies the number of times the tree-structured spatial index may divide into branches. Setting the value to -3020 flattens the Z index giving you more granular nodes in the XY which yields faster object selection. It has no effect on the elevations of your objects.

Carlson Software Opens Training Facility

Beginning in July, Carlson Software will offer professional training at our facilities in Maysville. Each student will be exposed to intensive, hands-on classroom training that will dramatically improve their productivity and efficiency. We keep our classes small, our classrooms will contain no more than eight (8) workstations, allowing for individual attention. Each student will have their own workstation. Only the latest software versions will be used. Rather than lecture all morning then expect you to work out the exercises in an afternoon lab, our approach to training is to discuss one topic at a time, then reinforce that discussion with a hands-on exercise. All training materials and books are yours to keep afterwards.

Why Professional Training: Employers pay for training one way or the other. Self teaching means time, unproductive time spent on trial and error learning, trying to figure out a way to do it, usually not the best way. Quality training will allow the student to "hit the ground running", to be able to sit down and do the work quickly and accurately.

Time Schedules: Classes typically run from 9:00am to 4:30pm, with short breaks at 10:45am, and 2:45pm. Lunch will be from 11:50am to 1:00pm. Dress is Casual to Extra Casual.

Student Evaluations: After each class, each student completes an anonymous evaluation of the training. The feedback we get from our students allow us to refine our training methods to focus on what works best.

Attendance Certificates: After completing a class, each student will receive a professional certificate listing the class taken, number of hours, and date completed.

Description	Days	Price
AutoCAD R14 Update	(2-day)	$450.00
AutoCAD Map R2	(2-day)	$450.00
AutoCAD Level 1	(2-day)	$450.00
AutoCAD Level 2	(2-day)	$450.00
AutoCAD Level 3	(2-day)	$450.00
AutoLISP Fundamentals	(2-day)	$450.00
AutoLISP Advanced	(2-day)	$450.00
SurvCADD Fundamentals	(1-day)	$250.00
SurvCADD Cogo/Design	(1-day)	$250.00
SurvCADD DTM/Contour	(1-day)	$250.00
SurvCADD Sect/Profile	(1-day)	$250.00
SurvCADD Hydrology	(1-day)	$250.00
SurvCADD Mining	(1-day)	$250.00
SurvCADD Advanced Mining	(1-day)	$350.00
SurvCADD Regrading	(1-day)	$250.00

Catalog Available: Call today to request your copy of our training catalog which gives all details of the classes we offer.

Quantity Discounts: Special pricing may apply depending on the number of days requested and multiple students from the same company. Call for a quotation on quantity training.

Cancellations & Rescheduling: We reserve the right to cancel, change, or reschedule any class based on attendance levels.

July 1997

Monday	Tuesday	Wednesday	Thursday	Friday
	1 AutoCAD R14 Update	**2** AutoCAD R14 Update	**3**	**4**
7	**8** AutoCAD R14 Update	**9** AutoCAD R14 Update	**10** SurvCADD Fundamentals	**11** SurvCADD Regrading
14 AutoCAD R14 Update	**15** AutoCAD R14 Update	**16** SurvCADD AdvMining	**17** AutoCAD R14 Update	**18** AutoCAD R14 Update
21 SurvCADD Fundamentals	**22** SurvCADD Cogo/Design	**23** SurvCADD DTM/Contour	**24** SurvCADD Sect/Profile	**25** SurvCADD Mining
28 AutoCAD Map R2	**29** AutoCAD Map R2	**30** AutoCAD Level 1	**31** AutoCAD Level 1	

August 1997

Monday	Tuesday	Wednesday	Thursday	Friday
				1
4 AutoCAD R14 Update	**5** AutoCAD R14 Update	**6** SurvCADD Regrading	**7** AutoCAD R14 Update	**8** AutoCAD R14 Update
11 SurvCADD Fundamentals	**12** SurvCADD Cogo/Design	**13** SurvCADD DTM/Contour	**14** SurvCADD Sect/Profile	**15** SurvCADD Mining
18 AutoCAD R14 Update	**19** AutoCAD R14 Update	**20** SurvCADD AdvMining	**21** AutoLISP Level 1	**22** AutoLISP Level 1
25 AutoCAD Map R2	**26** AutoCAD Map R2	**27** AutoCAD Level 2	**28** AutoCAD Level 2	**29**

September 1997

Monday	Tuesday	Wednesday	Thursday	Friday
1	**2**	**3**	**4** AutoCAD R14 Update	**5** AutoCAD R14 Update
8 SurvCADD Fundamentals	**9** SurvCADD Cogo/Design	**10** SurvCADD DTM/Contour	**11** SurvCADD Sect/Profile	**12** SurvCADD Mining
15 AutoCAD R14 Update	**16** AutoCAD R14 Update	**17** SurvCADD AdvMining	**18** AutoLISP Level 2	**19** AutoLISP Level 2
22 AutoCAD Map R2	**23** AutoCAD Map R2	**24** AutoCAD Level 3	**25** AutoCAD Level 3	**26** SurvCADD Regrading
29 AutoCAD R14 Update	**30** AutoCAD R14 Update			

Carlson Software Is Moving

Carlson Software will be moving on June 13th, but we are not leaving the historic town of Maysville. We have outgrown our current space, and have found more spacious accommodations a few blocks away. The new address beginning on June 15th is:

Carlson Software, Inc.
102 West 2nd Street, Suite 200
Maysville, KY 41056

The phone, fax, and BBS numbers will remain the same. If you are unable to reach the Maysville office on June 13th, please call the Boston office at 617-621-3829.

World Wide Web

Carlson Software now has a presence on the Internet. Our home page can be reached at *www.carlsonsw.com*. We have found a growing use of the internet with a decline in the use of our bulletin board. Users prefer this method because of the convenience and savings in sending and receiving large files. Send your support enquiries to *support@carlsonsw.com*, and sales questions to *sales@carlsonsw.com*.

AutoCAD Map R2 Around the Corner

AutoCAD Map Release 2 is the latest version of AutoCAD Map, Autodesk's automated mapping and GIS tool for engineers, planners, managers, and other professionals who create and maintain maps and use their data for engineering-based analysis and planning. Built on AutoCAD® Release 14 software, AutoCAD Map provides double-precision accuracy and a full suite of map creation and maintenance tools in the AutoCAD environment. In addition to full GIS topology creation and analysis, thematic mapping, and extensive plotting capabilities, Release 2 offers dramatic speed and data-capacity enhancements, integrated raster support, and expanded file import/export.

AutoCAD Map software leverages users' existing mapping investment with support for industry-standard raster and vector file formats. Supported vector file formats include ESRI ARC/INFO® Coverage and ESRI ArcView® SHP, MapInfo® MIF/MID™, Microstation® DGN™, as well as Autodesk MapGuide™ SDF and DXF™. Fifteen common raster file formats are also supported.

Get the mapping solution you've needed to bring information down to earth—AutoCAD Map™.

R14-Map/AdvMine Seminar

Carlson Software will be presenting a full day of demonstrations of the latest products from Autodesk and Carlson Software. See the dates on the right for the seminar. The morning session will cover all the new functionality of AutoCAD Release 14 and AutoCAD Map R2. In the afternoon you can see all of the outstanding features of the latest development in mining software. The SurvCADD Advanced Mining Module will be demonstrated. A question and answer session will follow both sessions.

Camera Acquisition

Carlson Software acquired the rights to CAMERA from Robert Ray & Associates, along with the FontPro, HatchPro, LinePro, PlatPro, ViewPro, and PlotPro products. These products were developed by Steve Weber. Carlson Software plans to incorporate all of the unique features of this software into future versions of SurvCADD. Unique CAMERA features will be added to the SurvCADD Advanced Mining module.

Carlson GIS chooses AutoCAD Map R2 as GIS foundation.

AutoCAD Map Release 2 will be the foundation for the forthcoming GIS add on products from Carlson GIS. Building upon the global CAD standard of AutoCAD, we are producing specialized GIS applications that are tightly integrated with AutoCAD Map. We are in a unique position to call upon resources found in the existing SurvCADD modules, especially DTM/Contour and Mining, as well as the polygon logic foundation that has served us so well. Who else could allow you to cut a topology through coal thickness and sulfur grids and write back the volume/tonnage numbers to database tables to aid in unmined minerals taxes?

Keep an eye on future newsletters for more information on our MapPLUS™ and CoalGIS™ modules.

New Employee's

Carlson Software welcomes the following new employees.

Leonid Entov, Ph.D. in Mining Engineering from Penn State, joined the company in August 1996. Dedicated to the development of the Mining and Advanced Mining modules and support for Internet Services.

James Karom, Jr., E.I.T., B.S., in Geo-Environmental Engineering from Penn State University and member of SME, joined the company in January 1997. Dedicated to GIS services and technical support.

Gordon Frohloff, graduate of Franklin Pierce College in New Hampshire, joined the company in March 1997. With Softdesk for over two years, he now heads up the sales of the CarlsonGIS project.

Raj Narayanan, M.Sc. in Environmental Engineering from SUNY at Buffalo, begins work on GIS applications in May 1997.

Carlson Software, Inc.

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