

# **Vision Technologies: Connecting It All**

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## **Preface**

### **Purpose of this guide**

This guide provides an overview of current vision technologies and how they can work together to provide Braille-using students with an effective and independent means of participating in classroom activities. Each section highlights one stage of the process, from accessing information and resources to producing print or braille materials.

This guide is available in print and electronic formats on SET-BC's web site at <[www.setbc.org](http://www.setbc.org)>.

### **Contributors to this guide:**

Section 1: Scanning and optical character recognition

Dave Rathwell, School District # 35, Langley

Section 2: Importing and exporting files

Mallory Burton, SET-BC Region 6, North Coast

Vicky Midtdal, SET-BC Region 3, Vernon

Section 3: Braille translation

Carol Graham, SET-BC Region 1, Vancouver Island / Central Coast

Madeline Bailey, SET-BC Region 1, Vancouver Island / Central Coast

Section 4: Information resources

Dave Manzer, SET-BC Region 2, Vancouver / Lower Mainland

Micki Nakashima, SET-BC Region 2, Vancouver / Lower Mainland

Demonstration:

Plugging It All Together

Dave Manzer, SET-BC Region 2, Vancouver / Lower Mainland

Appendix:

Vision Technologies – Product Information

Vision Technology Vendor List

## **About SET-BC**

Special Education Technology British Columbia (SET-BC) is a Provincial Resource Program designed to assist BC school districts in meeting the technology needs of students with physical disabilities and visual impairments.

SET-BC's mandate is:

- to lend assistive technologies (reading, writing, and communication tools) where required to ensure students' access to educational programs, and
- to assist school districts in providing the necessary training for students and educators in the use of these technologies.

Each BC school district has a SET-BC District Partner who can provide information on how services are provided for eligible students. For more information and resources on assistive technology, check SET-BC's web site at <http://www.setbc.org>.

## Section 1: Scanning and Optical Character Recognition

### SCANNING AND OPTICAL CHARACTER RECOGNITION:

#### WHAT IT IS AND SUGGESTIONS FOR DOING IT BETTER

##### Part A. Preliminary Information

###### *Description of student need:*

The student with a visual impairment needs the same access to resources as a sighted student.

###### *Assumptions:*

- The school district is committed to providing visually impaired students with the same opportunity for learning resources as sighted students
- Literacy results from the active process of reading, rather than the passive process of listening, therefore students who utilize scanned text should do so via hard copy (translated) Braille or a refreshable Braille display
- The technology described in this document will consist of industry standard hardware and software i.e. a Pentium computer running Windows 98, an HP scanner, OmniPage Pro 10, and Microsoft Word 2000
- Due to its graphical interface, OmniPage Pro 10 is not fully accessible to a blind user. Products by Arkenstone and Kurzweil are better suited to providing independent access to print, for blind users.

###### *Why Scan?*

- Scanning print material and creating e-text is a highly efficient way of providing source, reference and reading material for Braille using and low vision students
- Students have access to any and all reading material, thereby encouraging them to read more
- Material can be provided for blind and low vision students quickly and on-sight, thus providing them with written information at the same time as their classmates
- The resulting e-text is not consumable, cannot get lost or misplaced, and is permanently archived for future students' reading needs
- Students equipped with a computer and a refreshable Braille display can carry disks rather than cumbersome multi-volume Braille books
- By using the "find" command in their word processor students can navigate e-text easier and faster than hard copy Braille

**Prerequisites:**

- The school district has the financial resources to provide a \$2500.00 (approx) technology investment
- The school district has the human resources to provide a consistent daily time allotment for the production of electronic text (e-text)
- Students and support personnel have the necessary Braille and computer skills to utilize the scanning / OCR process

**Equipment Needed:**

- Pentium computer (USB port, 64 meg RAM, Windows 95/98)
- Name brand scanner with USB connection (e.g. HP, Epson)
- OmniPage Pro 10 Optical Character Recognition software
- Microsoft Word 97 or 2000

**Which Computer?**

- Transferring files to your student is much easier if you have the same operating system as your student. In most cases this will mean that a Windows computer is preferable
- Scanning speed is directly related to the clock speed of the computer (mHz). The faster the computer the faster the scan
- The amount of RAM determines how much scanned information and how many application programs your computer can have open at once. Since OCR programs and typical word processors require a lot of RAM, the more the better. A minimum of 64 meg is recommended however, 128 meg of RAM is preferable.
- A USB (Universal Serial Bus) port is preferable in that it provides faster communication to and from the scanner than the parallel port

**Which Scanner?**

- USB scanners are faster and free up the parallel port for use with an embosser. Name brand scanners will lead to fewer system conflicts and easier configuration with the OCR program.
- Parallel scanners are cheaper but they are considerably slower.
- Some scanners (such as HP) allow one button scanning of graphics which can be useful for low vision students
- Automatic Document Feeders are a useful add-on for high volume e-text production

### **Which Optical Character Recognition Program?**

- OmniPage Pro 10 is the current industry standard and claims to have the highest accuracy
- Other OCR programs will work, however, OmniPage Pro 10 allows you to work directly from within other applications (e.g. Microsoft Word)
- OmniPage Pro 10 allows you to save your scanned work with different extensions so they will open in a variety of applications (Word, Word Perfect, PowerPoint, Excel)

### **Part B. The OmniPage Pro 10 Program**

#### **General Information:**

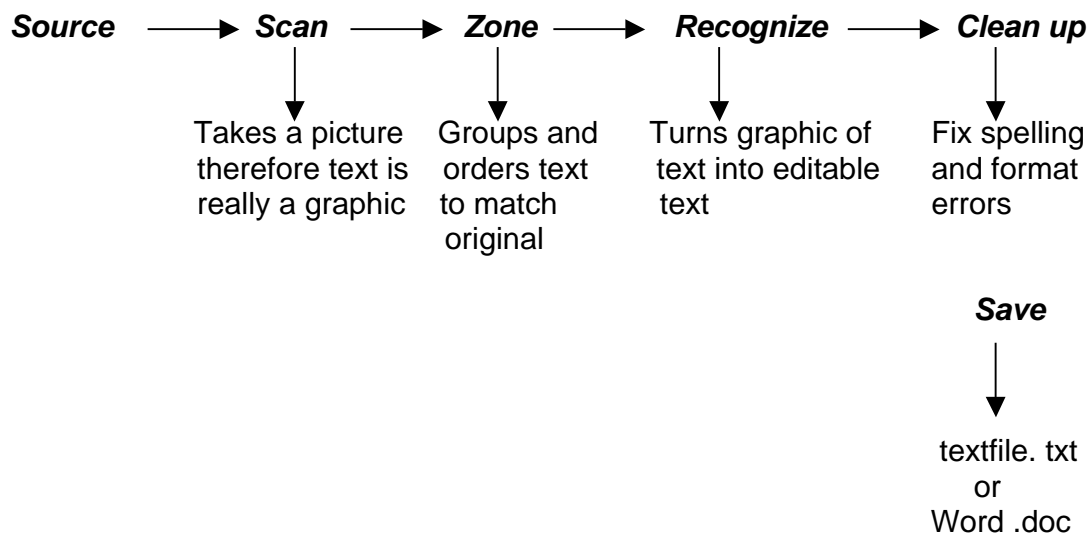
- Aside from the standard Windows menu bar and toolbar, the program is divided into four major parts – the Auto OCR toolbox, the Thumbnail View, the Image View, and the Text View.
- The Auto OCR toolbox contains buttons (and corresponding toolbars) for Auto OCR, Manual OCR and the OCR Wizard
- The Thumbnail View displays the scanned pages. Clicking on each page opens the corresponding recognized text for that page. Pages may be re-ordered here
- The Image View displays the zones on the page. They can be manually changed here (see **About Zones**)
- The Text View displays editable text which can be cleaned up here (see **About Cleanup**)
- The toolbar for the Auto OCR button contains settings for the Document Source, Original Layout, Output Format, and Export Destination in individual drop down listboxes.
- The toolbar for the Manual OCR button combines the settings for Original Layout and Output Format.
- Zone templates can be created to pre-define a zone. This is one way of eliminating unwanted text such as headers and footers. Templates are only effective if the text is in exactly the same place on each page. Otherwise it is better to ignore the zone (see **About Zones**)
- Scans can be scheduled to occur automatically. This allows you to turn the page and have OmniPage Pro 10 scan the next one, without you having to press the Start button. This is convenient and saves time.

#### **Major Features of OmniPage Pro 10 (including differences between OmniPage Pro 10 and earlier versions)**

- Graphical interface with buttons to Start, Stop, and Finish the OCR process
- The process is more extensive in that after the physical scan and transfer of information, an internal scan and recognition process takes place. This involves symbol matching and character analysis using three OCR engines within the program. The result is often a slower process that yields extremely accurate results
- The “Save” dialogue box has “basic” and “advanced” options. Choose “advanced” to see all of the “Save” options (including “retain graphics”)
- Graphics cannot be omitted during the scanning process. They can only be omitted at the time of “Save” by unchecking “retain graphics”. This results in a slower recognition process.
- After “saving” a document the program can automatically launch your word processor and copy the scanned document into it. This is activated by checking the “Save and Launch” checkbox in the “Save” dialogue box
- The name for the ability to scan from within your word processor has been changed from “OCR Aware” to “Direct OCR”
- The “thumbnail view”, “image view”, and “text view” windows can be hidden by clicking the corresponding icon on the status bar at the bottom of the screen. If you wish to clean up your document in OmniPage Pro 10, hide the “image view” and “thumbnail view” to provide a larger “text view” window
- The “Defer OCR” option has been removed. Deferring OCR can be accomplished by scanning all pages in “Manual OCR” then changing to “Auto OCR” and pressing the “Finish” button. All pages will then be recognized. Alternatively, the recognition process can be scheduled to take place at a given time (in Process menu).

### Part C. About Scanning with OMNIPAGE PRO 10

The Process:



### **About the Source Document:**

- Clean copy saves a huge amount of time in clean up
- Examine the flow of text on the page to decide whether or not there are areas of text that need to be reordered or ignored.
- For close columns you can draw a pencil line between them. This eliminates the scanner joining two columns into one zone and creating lines of text that run across both columns. This applies mainly to older OCR programs
- If the source document is single page and will be carefully oriented with the top of the page at the top of the scanner, uncheck “Automatically straighten page image” and “Automatically correct page orientation” in the “Process Settings” dialogue box (see **Process Options**). Doing this will speed up the scanning process. However, if the page is to be put in the scanner sideways or upside down make sure “Automatically correct page orientation” is checked.

### **About Zones:**

- In order to reconstruct the page after it has been scanned, the program must organize it into its component parts. These may be headings, paragraphs, pictures, captions, sidebars or tables. Each part is separated, enclosed in a border and becomes a separate zone. Text zones are enclosed in a blue border and picture zones are enclosed in a green border.
- Only information in zones will be recognized and processed.
- Zones are determined by the program but can be altered using icons on the “Image Toolbar” (located in the Image View). To activate the “Image Toolbar” click anywhere in the Image View (except on the toolbar itself as this will not activate it). The icons on the Image Toolbar allow you to re-draw the zones, reorder them or change their properties such as ignoring them (useful for running headers).
- Redrawing zones allows you to combine small zones into one larger one or split large zones into smaller ones. In most cases this is unnecessary as the program usually does a good job of determining appropriate zones
- To reorder zones, click on the “Reorder Zones” icon in the Image Toolbar after it has been activated. All the zone numbers will disappear. Click on each zone in the new order you want them. Zones will be renumbered accordingly. Click the “Finish” button. You will be prompted to “Finish processing existing pages”. Choose this and the page will be reprocessed in the new zone order. Reordering zones is often necessary when dealing with sidebars which interrupt the contextual flow of the page.
- Zones may be ignored during processing by selecting them, choosing the Zone Properties icon from the Image Toolbar and choosing “ignore zone” from the settings dialogue box that appears. Alternatively, zones can be ignored by right clicking on them and choosing “ignore zone” as the zone type. This is an easy way to eliminate running headers and footers that may

not be appropriate for e-text for Braille using students. This is also simpler than creating zone templates

- Graphic zones will automatically be ignored if the “retain graphics” checkbox (in the Save dialogue box) is left blank.
- Changes to the way Image View appears can also be made from the Image Toolbar. These include rotating the page, straightening the page and zooming in to make the text on the page larger.
- Many zone changes can be undone by pressing the “Undo” command in the edit menu (or using Control+Z). This will return the zone to its previous state.

### ***About the “Document Source” Listbox***

- If the original text is very crisp black on white use “Scan B&W”. Otherwise choose “Scan Grayscale” as the “Document Source” setting. Caere recommends this setting as the one that provides the best overall results.

### ***About the “Original Layout” Listbox***

- “Multiple Column” is the safest setting for Braille users because it doesn’t matter if the source document is in columns or not. Conversely, the “Single Column” setting will cause a columned source to be scanned in a single zone, combining the lines from each column. Graphics will be ignored unless the “retain graphics” is checked in the “Save” dialogue box. For low vision students choose “Mixed Page” when columns and/or graphics are present in order to preserve them.

### ***About the “Output Format” Listbox***

- For Braille using and low vision students the “Retain Font and Paragraph” setting works well. It will preserve the original layout of the page, however graphics will be placed at the bottom of the page.
- If True Page is selected, the exact layout of the page will be preserved, however the zones will become textboxes, which are harder to edit in Word.

### ***About the “Export Destination” Listbox***

- Choosing “Save as File” will cause the Save dialogue box to appear after each page is scanned and recognized. The Save dialogue box contains checkboxes for “retain graphics” (in Advanced mode) and “save and launch” (to automatically launch Word and copy the text into it). For multi-page scans, rather than cancel the Save dialogue box each time a page is scanned, press the Stop button after the page has gone through the second

scanning stage (the first time in the Progress Monitor and the second time on the Status Bar. Choose “add more pages” from the dialogue box that appears and repeat this for each page. After the last page is scanned choose “process all pages”. OmniPage Pro 10 will do the final recognition for each page and open the “Save” dialogue box. Uncheck the “retain graphics” checkbox for Braille users. If “save and launch” is checked, Word will open (after the file is named) and the entire document will be copied into it.

- Choosing “Copy to Clipboard” causes each page of scanned and recognized text to be sent to a temporary folder until it is ready to be saved. Also, the Finish button is replaced with the Additional button. The Additional button allows you to continue scanning pages without having the Save dialogue box open, or having to use the Stop button and “add more pages” as explained above. To save your document after all pages have been scanned, change from “Copy to Clipboard” to “Save as File”. Pressing the Additional button will now open a dialogue box. Choose “export document again” and the Save dialogue box will open. If you have sufficient RAM (64 or greater), this method is preferable for multi-page documents.
- Choosing “Read Text Aloud” will cause the page to be read out loud. To save recognized text after it is read, choose “Save As...” in the File menu.

#### **Using The “Auto OCR” Button:**

- Choosing “Auto OCR” and pressing the Start Button will cause scanning, zoning, recognizing, and exporting to be done automatically according to the toolbar settings for “Document Source”, “Original Layout”, “Output Format” and “Export Destination”.
- “Auto OCR” corrects upside down and sideways pages if “automatically correct page orientation” is checked in the Tools / Options / Process dialogue box.
- The “Auto OCR” button reproduces text in the same order as the original page. If this is not the order you want, you can activate the Image Toolbar after you have used “Auto OCR”. This allows you to redraw, reorder and/or ignore the text zones on a page and then re-process the page, after the “Auto OCR” process is finished. To do this click in the “Image View” after the page has been processed and follow the directions for reordering zones and ignoring zones in **About Zones**.

#### **Using the “Manual OCR” Button:**

- Using the “Manual OCR” button, the individual processes will only be performed when the associated settings buttons are pressed. Buttons do not visually appear until the mouse pointer is placed over the label for each setting. The settings may be changed by clicking on the arrow next to each

label. Choose settings for “Document Source”, “Original Layout and Output Format”, and “Export Destination” here. This toolbox is different from the Auto OCR Toolbox in that the buttons for Original Layout and Output Format are combined into one.

- It is generally unnecessary to use the “Manual OCR” button as all manual zone changes can be made via the Image Toolbar, after Auto OCR has taken place. This includes clearing a border and re-drawing the zone, combining multiple zones into one, separating large zones into smaller ones, reordering zones, and changing zone properties (e.g. ignore zone)
- The Manual button can be used to defer OCR (see **Major Features of OmniPage Pro ...**)

### **About the Clean Up:**

- Cleanup involves the correction of spelling and formatting errors that the OmniPage Pro 10 (or any OCR) program has made
- Clean up may be done in either OmniPage Pro 10 or your word processor
- If clean up is done in OmniPage Pro 10 check the “automatically proofread results after OCR” checkbox located in the Tools / Options / Process dialogue box. After the OCR process you will be prompted to correct the suspect words on each page .
- It is usually quicker correct the spelling and formatting of the entire document in the word processor (e.g. Microsoft Word), than to do it one page at a time in OmniPage Pro 10. This is because you can use the Find and Replace feature in the word processor to make global corrections to the document. Word will mark misspelled words with a red underline if “Check Spelling as You Type” is activated (Tools / Options / Spelling and Grammar). This makes them easy to spot. Uncheck “proofread OCR” in OmniPage (Tools / Options / Direct OCR) if you are going to clean up in Word. It is redundant to have both the OmniPage and Word spellcheckers running at the same time and doing so may lead to system crashes.

### **About Saving:**

- Make subject folders in Windows Explorer on your computer and have the student do the same. Microsoft Word creates a default data folder called “My Documents”. You can make subject folders within My Documents however, this is just another folder that must be opened to get to the subject folder. It is more efficient if subject folders (on both your computer and the student’s) are made directly off of the C:\ drive.
- Choose Advanced in the Save dialogue box to see all the dialogue box choices
- Choose from the “Save As Type” listbox in the Save dialogue box according to the application program you will use to open it. Checking the “Save and

Launch” option will cause that application to open. The file will be automatically copied into the application, after it opens

- For students with their own laptops save the cleaned up document to disk (“Save As”) after saving it to your hard drive so that you always have a master document

### **The “Process Options” Multi-page Dialogue Box:**

- This multi-page dialogue box may be accessed page at a time from the Tools / Options menu, globally from the Process / Select Process Settings menu or globally by clicking on the Options icon on the standard toolbar. It may also be accessed from within registered applications through the File menu / “acquire text settings”
- An explanation of each setting can be accessed by right clicking on it
- Caere claims a 30% increase in speed if “Fastest” is chosen on the Options / OCR page (accuracy is compromised so use only for very clear source documents).
- Source documents in different languages may be scanned and accurately reproduced if the language is selected on the Options / OCR page
- Scans can be scheduled on the Options / Scanner page. Scheduling a one second time between scans allows you to turn the page and have the scan start automatically.
- If you have an automatic document feeder (ADF) activate it on the Options / Scanner page
- Brightness and contrast may be adjusted on the Options / Scanner page. Lighten the Brightness setting for thick, run-together text characters and/or dark backgrounds. Darken the setting for thin, broken text characters. Use the slider box to manually adjust the contrast between light and dark on scanned pages. Move the slider to high for light text on dark backgrounds.
- To scan from within Word select “Enable Direct OCR” on the Options / Direct OCR page. Select “Draw Zones Automatically” to have the document recognized in Word. Do not select “Proofread OCR” if you plan to use the spellchecker within Word
- Register applications (Word is automatically registered) on the Options / Direct OCR page. This puts “acquire text” and “acquire text settings” in the file menu of the desired application.
- Adjust page orientation settings on the Options / Process page. Do not select “Automatically Proofread Results after OCR” unless you plan to clean up the document in OmniPage. Make sure “Automatically Correct Page Orientation” is selected if pages will be placed on the scanner upside-down or sideways. Uncheck this and “Automatically Straighten Page Image”, however, if they don’t apply. Leaving them checked slows down the scanning process.

### **Optimum Settings:**

- With it's increased emphasis on accuracy, OmniPage Pro 10 is known to be slower than previous versions.
- The optimum speed settings for Auto OCR (assuming clear text, right side up orientation, no zone modifications, and recognition to be done at the time of scan) is:
  - OCR Method – Fastest
  - Automatically Scan Pages – 1 second
  - Automatically Proofread Results After OCR – unchecked
  - Automatically Straighten Page Image – unchecked
  - Automatically Correct Page Orientation – unchecked
  - Look For Tables - unchecked
- The optimum speed settings for Manual OCR (assuming same as above, except recognition to be done separately) have the same settings. After all pages are scanned press the Layout /Format button to have all pages recognized and then the Export Destination button to save the document. This is slightly faster than the Auto Process

### **Known Issues:**

- It has been noticed that OmniPage Pro 10 may be slower (but far more accurate) than previous versions.
- It has been noticed that OmniPage Pro 10 may work slower with HP scanners than with other brands (This has to do with the drivers that HP scanners use)
- It has been noticed that OmniPage Pro 10 may be somewhat unstable. It may freeze, refuse to complete the entire OCR process, stop scanning arbitrarily in the middle of a job or not import into Word when working in that program and Direct OCR is selected. Once OmniPage Pro 10 becomes unstable it may or may not run properly after restarting the computer. The preferred way to regain stability is to completely uninstall the program. To do this:
  - Use "Add/Remove Programs" to uninstall Caere Scan Manager
  - Use "Add/Remove Programs" to uninstall OmniPage Pro 10
  - Use "Find" command to locate any other Caere folders and files, "select all" and delete them
  - Use "Find" command to locate any other OmniPage folders and files, "select all" and delete them
  - Reinstall OmniPage Pro 10 and Caere Scan Manager

## **PART D: Scanning Directly into Microsoft WORD '97 or 2000**

### **General Information:**

- The OCR process can be done directly from within Microsoft Word, making it fully accessible for blind students to do their own scanning
- The process is generally slower using Word because you must wait for the entire process before proceeding to the next page. Some time saving settings can be made when scanning is done in OmniPage Pro 10 (see **Optimum Settings**)
- “Direct OCR” must be selected in the OmniPage Pro 10 Options dialogue box before scanning is possible from within Microsoft Word.
- Source text may be in columns (make sure Original Layout is set to “multiple columns” in OmniPage). The columns will be replaced with a properly ordered, continuous flow of text
- Source material may be scanned upside down or sideways (make sure “correct page orientation” is checked in the OmniPage Options dialogue box (Tools / Options / Process).
- For Braille using students, graphics will not be retained if the “retain graphics” checkbox it is not checked in the OmniPage Save dialogue box
- For low vision students graphics will be retained if the “retain graphics” checkbox is checked in the OmniPage Save dialogue box
- Options for OCR, Scanner, Format, and Direct OCR can be made from within Word. These options are found in the Word “File” menu item “acquire text settings”. Once chosen a multi-page dialogue box opens. To have graphics included for low vision students make sure “mixed pages” and “retain font and paragraph” is selected in the “Format” page of this dialogue box. (Make sure “True Page” is not selected in the OmniPage “Output Format” listbox or text and graphics will appear in format boxes that are difficult to edit). Graphics will be placed at the bottom of the page. If the graphic appears washed out or is unrecognizable right click on it and choose “edit picture” from the context menu that appears. This will automatically correct the resolution of the picture. Close the “edit picture” window and return to the scanned page.
- For low vision students the font size can be adjusted (however, graphics will not be enlarged making them disproportionate to the text). It may be preferable to use a screen enlarging program which will maintain proper proportions between text and graphics.

### **The Process:**

- Open a “New” Word document
- To have Word underline words that are not scanned correctly, choose “check spelling as you type” from the Tools/Options/Spelling and Grammar dialogue

box in Word. This makes it easier to identify misspelled words during clean up.

- In the “File” menu choose “acquire text settings”. Make settings changes if necessary (see **General Information**) and close the dialogue box. You cannot access templates when working in Microsoft Word.
- In the “File” menu choose “acquire text”. The scan, zone and recognize process will take place in Word.
- Subsequent scans using “acquire text” from the “File” menu will place text after the cursor location in the Word document.
- After all source material has been scanned into the Word document it may be easier to clean up if it has uniform size, font and justification. This will not be appropriate if retaining original text attributes is important for the student. To do this, however, choose “select all” in the “Edit” menu. This will highlight all of the text in the document. Press Control+Spacebar remove all attributes (bold, italics, etc.). Press Control+L to left justify all of the text and then choose a size from the toolbar that is easy to work with. Press the Up Arrow to remove the highlight and place the cursor at the top of the document.
- Save document regularly

## Section 2: Importing and Exporting Files

### Framework:

#### ***Description of student need:***

Students need to have a way to transfer files between the \*Braille 'n Speak and the computer. They may also need to import files such as worksheets, scanned materials, e-text, or tests created on another computer (Mac or PC) to their computer or Braille 'n Speak.

#### ***Prerequisite skills to use the technology independently:***

1. Create and edit files on the Braille 'n Speak
2. Format floppy disks
3. Navigate in Windows using JFW
4. Create and edit files in Word using JFW
5. Create and edit files in Duxbury using JFW
6. Navigate in Open and Save dialogue boxes using JFW
7. Connect Braille 'n Speak to disk drive

#### ***Equipment needed at the station:***

- Windows desktop with Word and Duxbury (or laptop with external monitor)
- Mac desktop with Word and Duxbury (or laptop with external monitor)
- Braille 'n Speak or BrailleLite
- Braille 'n Speak Disk Drive fully charged (cable, power adapter)
- Floppy disks

#### ***Team support needed to ensure technology will be implemented successfully:***

- Familiarity with Windows, JFW, Word, Duxbury, Braille 'n Speak, and Disk Drive
- Ability to teach student prerequisite skills listed above
- Ability to teach student workshop tasks listed below

\*Although the term Braille 'n Speak is used throughout this section, the basic principles and procedures apply to the Braille Lite as well.

***Classroom implementation strategies:***

- Using the Braille 'n Speak for note-taking; transferring the notes to a Word document for polishing and printing
- Using the Braille 'n Speak for homework; transferring the draft to a Word document for polishing and printing
- Transferring a Word document to the Braille 'n Speak so the student can continue working at home
- Transferring scanned materials, e-text, or other material from a computer (Mac or PC) to the Braille 'n Speak for reading or further work
- Transferring materials created on one platform to another, e.g. teacher-made worksheets and tests

***Common barriers or challenges that might occur:***

- Unplanned format changes or loss of formatting
- Unplanned changes to Braille 'n Speak settings
- Charging issues with Braille 'n Speak and Disk Drive
- Technology compatibility issues

***Tasks the VI teachers will do at this station:***

- Exporting a file from the Braille 'n Speak to a floppy disk in both text and Braille formats using the disk drive.
- Opening the text file in Word.
- Opening the Braille file in Duxbury.
  
- Creating a new text file in Word and saving it to a floppy.
- Creating a new Braille file in Duxbury and saving it to a floppy.
- Importing the new text and Braille files to the Braille 'n Speak using the disk drive.

***Additional tasks that will be demonstrated at this station (time permitting):***

- Transferring a Word or Duxbury file between Mac and Windows computers via a floppy disk.
- Troubleshooting transfer problems.

## Importing and Exporting Files using the Braille 'n Speak

### ***To export a Braille 'n Speak file that can be opened in Duxbury or Word:***

- Connect disk drive and Braille 'n Speak with cable.
- Turn on the disk drive.
- Turn on the Braille 'n Speak and open the file you want to send.
- Insert a formatted disk into the disk drive.
- Enter S-chord.
- You will hear "Storage".
- Enter T to save the file for export as a text file.
- You will hear "Save text. Enter filename".
- Or: Enter B to save the file for export as a Braille file.
- You will hear "Braille. Enter file name."
- Or: Enter S to back up the file for future use with the Braille 'n Speak.
- You will hear "Save. Enter file name."
- Enter the filename and extension.
- Use the extension .txt to identify a text file.
- Use the extension .brl to identify a Braille file.
- (Use dots 4-6 to type the period.)
- Enter E-chord to initiate the transfer.
- You should hear a beep on the drive and "okay" when finished.

You can use a pre-formatted DOS disk, a disk formatted on a computer, or a disk formatted on the Braille 'n Speak disk drive. However, formatting a disk using the disk drive drains the battery quickly.

If you hear "Storage device missing" turn on the disk drive and enter the s-chord. If you hear nothing, recharge the unit before attempting to save. If you hear a message about x-modem and y-modem, the disk drive is not being recognized. Turn everything off and hook up the cables again.

**To import a file on floppy disk to the Braille 'n Speak:**

- Put the floppy disk into the Braille 'n Speak disk drive.
- Enter O-chord.
- You will hear "Option".
- Enter F.
- You will hear "Enter file command."
- Enter T-chord.
- You will hear "Disk drive. Enter S to send or R to receive."
- Enter R.
- You will hear "Enter filename."
- Enter the name of the file you wish to load from the disk drive.
- Enter E-chord.
- You will hear "Okay", two beeps on the disk drive, and then "Enter file command".
- Enter O.
- You will hear "Enter file to open."
- Enter the name of the file you wish to open (the one you just received). This file will be last in the list of files on your Braille 'n Speak.

Imported .txt files will be uncontracted, and Braille translation should be turned off in the Status Menu. If you are hearing gibberish, go into the Status Menu and turn Braille translation off. (Status Menu [st-chord], Quick key [t] and [n] to turn translation off.)

The Braille translator in the Braille 'n Speak converts Braille to text but cannot convert text to contracted Braille. Incoming text files will be uncontracted computer braille. If you are using a BrailleLite 40 with Super Flash Rom and want your student to read the file in contracted Braille, import the file as a text file, and then use Easy Braille or Quick Braille to translate it to contracted Braille.

Translation should be on to read a contracted Braille file. (Status Menu [st-chord], Quick key [t] and [y] to turn translation on.) Duxbury Braille files will probably be imported in read line mode. You may want to go into the Status Menu and change to sentence mode. (Status Menu [st-chord], Quick key [v] and [s] for sentence mode.)

## Importing and exporting with Word:

### *To open the file in Word from a floppy disk*

- Launch Word and choose the Open command from the File Menu (Ctrl-O). A dialogue box will come up.
- Choose 3 1/2 Floppy Drive a: in the **Look in** field. Select the file you want to open in the list box. If the file is not listed, make sure you have All Files selected in the **Files of type** field. The .brl extension should show up, but the .txt extension may not.
- Press Enter or click OK.

### *To export a file from Word to a floppy disk:*

- Have the file you want to export on the screen.
- Choose Save As from the File Menu. A dialogue box will come up.
- Type the file name in the **File name** field, e.g. test.txt.
- Choose 3 1/2 Floppy a: in the **Save in** field.
- Choose Text Only with Line Breaks from the **Save as type** field.
- Press Enter or click OK.

You may want to teach your students a little Dos to make locating files a bit easier. Typing the path to the file, (e.g. a: science/dinosaurs/triceratops) may be easier than navigating through the dialogue box.

## Importing and exporting with Duxbury:

### ***To open the file in Duxbury from a floppy disk:***

- Launch Duxbury.
- Choose the Open command from the File Menu (Ctrl-O). A dialogue box will come up.
- Choose a: in the **Drives** field. Select the file you want to open in the list box. If it is not listed, make sure you have the All Files option selected in the **List files of type** field.
- Press Enter or click OK.
- Another dialogue box comes up. In the **Template** field, choose Standard Format and in the **Import Filter** field, choose Duxbury Coded Braille for a Braille file or Duxbury Coded Text for a text file.
- Click OK.

### ***To export a file from Duxbury to a floppy disk:***

- Have the file you want to export on the screen in text or Braille.
- Choose Save As (F3) from the File Menu. A dialogue box will come up.
- Type the file name in the **File name** field, e.g. test.brl.
- Choose a: in the **Drives** field.
- To export a text file, choose Formatted Text from the **Save file as type** field. To export a Braille file, choose Formatted Braille from the **Save file as type** field.
- Press Enter or click OK.

Do not choose DBT Braille or Duxbury Coded Braille, or the line codes will also be transferred, and your files will be full of dollar signs and other codes. Braille files will be imported as contracted or uncontracted, depending on how they appeared in Duxbury.

## Transferring files between Mac and Windows:

Macs can read disks formatted on Windows machines, but Windows machines cannot read Mac disks. So, use Windows (Dos-formatted) disks when transferring between the two platforms.

- To format a Windows disk on a Mac, click once on the disk to select it, choose Erase Disk from the Special Menu, and choose Dos 1.4 MB from the format pop-up menu. On a Mac, the letters PC will appear on the floppy disk icon of a Dos-formatted disk.
- Cross-platform transfers using the same program usually work well, provided that the two versions of the program are similar. A Word 97 file from Windows can be opened by Word 97 on a Mac, and all the formatting will be preserved. A later version of a program can generally open earlier versions.
- To check the version of Word on a Mac, launch the program and choose About Microsoft Word from the Apple Menu or click once on the program icon and choose Get Info from the File Menu. To check the version of Word for Windows, launch the program and choose About Microsoft Word under the Help Menu.
- To check the version of Duxbury, launch the program and choose About DBT under the Help Menu. The most recent build date for DBT will be the most recent release of the program.
- Most Save As dialogue boxes will contain a pop-up menu that lets you select the format in which you want to save a file. Earlier versions, cross-platform versions, and cross-application versions are often included in that list. You may have to experiment to find which works the best. Saving as a text file will usually work as a last resort, but you will lose all your formatting.
- Most Open dialogue boxes will contain a pop-up menu that lets you select the type of file you want to open. If you do not see the file you want to open, choose the all files option in the file type field.

## **Troubleshooting Disk Drive Transfer Problems:**

### ***For further help see:***

Blazie, Bryan J., *Getting Started: A Teacher's Guide to the Braille 'n Speak, Second Edition.*, Blazie Engineering, 1993, pp. 73-79.

*Braille 'n Speak Manual*, pp. 82-86.

Cook, Graham. *Braille 'n Speak: A Public Domain Document to Assist Teachers*, 1994, pp. 58-60.

Svendsen, Kathryn. *Teacher's Quick Reference Guide To Braille 'n Speak Commands*, May 1977 Revision, pp. 32-37.

### ***To check what was transferred to the disk from the Braille 'n Speak or computer:***

- In Windows, open the .txt or .brl file in Word or Notepad (make sure word wrap is on under the Edit Menu).
- On a Mac, open the file with Simple Text or Word.
- Contractions will be shown as ASCII equivalents, e.g. the number 4 for a period.

## Section 3: Braille Translation

### Framework:

#### ***Description of student need:***

The student needs to access Word resources in braille.

#### ***Assumptions:***

1. student will work in Word to complete assignments
2. the braillist will use the Duxbury translation program to produce braille classroom materials for the student
3. the braillist will use the Duxbury program to translate student work (which is produced in Word) into braille
4. the student will use the braille hard copy to proofread and will edit in the text document

#### ***List of prerequisite skills:***

- familiarity with Windows
- familiarity with Word
- familiarity with Duxbury
- familiarity with a Braille printer

#### ***List of equipment needed:***

- a computer with a windows system with memory of 32 mg
- Microsoft Word
- Duxbury 10.2e or Duxbury 10.3
- print printer – compatible with pc
- braille printer

#### ***Team support needed to implement technology:***

- braillist (to produce, proofread and ensure that the braille is in proper format)

#### ***Classroom implementation strategies:***

- braillist will prepare, in advance, any materials needed for classroom activities
- student will use braille materials in curriculum activities (ex. math sheets should be in braille)
- student will complete daily work in braille or text and braillist will produce a copy for the teacher when required

#### ***Challenges that might occur:***

- loading software
- locating application in Windows (hint: add the program to the start menu or create a hotkey keystroke)
- see handout “Start Menus and Shortcuts”

- hooking up equipment – correct cables in proper ports, setting equipment parameters to work with all equipment at station. See handouts on Braille printers, Romeo and Versapoint and on Duxbury settings for the Versapoint.

## **Styles:**

### ***About styles in MS Word***

Styles define the appearance of various text elements of your document, such as headings, captions, and body text. Styles make formatting your document easier. Additionally, they serve as building blocks for outlines and tables of contents.

### ***About styles in Word transporting to Duxbury***

DBT Win Version 10.2e or 10.2

“ DBT now recognizes several of the most commonly used MS Word styles, and equates them with DBT styles.”

*Note of caution:*

*DBT trainers indicate that the name of the style in Word must not be changed or Duxbury cannot recognize it. Try the styles and see which transport accurately into Duxbury. For example, the style ‘Block text’ is a style available in Word that does not format correctly in Duxbury. You can modify styles in the Word/Styles/Modify option, but you cannot change the name of the style if you wish the style to be transported to Duxbury. Duxbury v10.3 features a list of the Word styles that will import successfully into the Duxbury Braille Translation program in their Help Menu under the heading: How DBT Maps MS Word Styles to DBT Styles*

## **Word Styles:**

### ***Title***

Use this setting to center a title in 16 pt. bold.

Characteristics: normal+font: Arial, 16 pt, Bold, Kern at 14 pt, centered, space before 12 pt. after 3 pt. Level 1

### ***Body***

Use this setting for the text of the document.

Characteristics: normal + space after 6 pt.

### ***List number***

Use this style for an indented list with automatic numbering

Characteristics: normal + indent:, hanging 0.25”, numbered, tabs: 0.25”

Note: The first line in the numbered indent does not indent properly if you choose a list number style other than ‘List number’.

### **List bullet**

Use this style for a bulleted list

Characteristics: normal + indent; hanging 0.25", bulleted, tabs: 0.25", automatically update

Note: The first line in the bulleted indent does not indent properly if you choose a list bullet style other than 'List bullet'.

### **Block Text**

Use this style for an indented blocked paragraph

Characteristics: normal + indent; left 1" right 1", space after 6 pt.

This style does not format properly when imported by Duxbury.

## **Braille Translation Station**

### **Activity 1, Part 1: Using Styles in Word**

Using the following styles:

- Title
- Body text
- List number
- List bullet
- Block text

#### **Create the following document in Word:**

- Open a new Word document. ctrl + n
- Set the style for a centered, bold title alt o, s, t arrow down to title, enter
- Write the title **Vancouver**. Hit enter to move to next line enter
- Set the style for the body of the document and enter text for body. alt o, s, b arrow down to body text, enter
- Write three sentences about Victoria
- Hit enter at the end of the paragraph. enter
- Write **Attractions:**
- Hit enter to move to next line. enter
- Set the style for a numbered list alt o, s, l arrow down to list number, enter
- List five tourist attractions that are in Vancouver.
- Hit enter to move to next line. enter
- Set the style for the body of the document alt o, s, b arrow down to body text, enter, enter
- Write **Things to buy:**

- Hit enter to move to the next line. enter
- Set the style for a bulleted list. alt o, s, l arrow down to list bullet, enter
- List 4 gifts you might purchase while in Vancouver.
- Hit enter to move to the next line. Enter
- Set the style for a blocked, indented paragraph alt o, s, b block text, enter
- Copy the following quote about Stanley Park:  
Both incredible and beautiful, this one thousand acre wilderness park is located only blocks from the downtown business and shopping sections.
- Save this file on the desktop, name it Vancouver. ctrl + s, name, enter
- Print this file ctrl + p, enter
- Exit Word File menu, exit

### **Activity 1, Part 2: Duxbury Braille Translation**

- Open the Duxbury Braille Translation Program. double click DBT
- Open the file Vancouver file/open/find file on desktop/double click
- Print a print copy ctrl + p
- Translate the document. ctrl + t
- Emboss a braille copy. ctrl + e
- Check the formatting.

## **Set Up For Versapoint Braille Printer To A Toshiba Laptop Computer With Windows 95**

The Toshiba needs to be configured as follows:

1. Go into printers and install new printer—choose generic
2. Now open Duxbury  
Under the menu 'global' choose embosser setup  
Choose Windows device—Generic device

The Versapoint needs to be set at parallel port.

The embosser needs to be turned on before you send the message to print from the computer.

If you wish to make any changes to the Versapoint perimeters follow these instructions:

1. Make sure the Versapoint is turned off.
2. Make sure the Versapoint is on line
3. Press and hold the line feed button and the power switch at the same time
4. Line feed = no  
Form feed= yes  
Top of form = exit
5. Press form feed to say yes at all options that you want to keep
6. When you get to the option that you want to change, press line feed to say 'no'. Keep pressing 'no' until it runs through the different options available to you. When you get to the option that you want, then press form feed to say 'yes'.
7. Push top of form to exit. It should read store on setup.
8. Push form feed to say yes.
9. Push top of form x2.

### ***Trouble with Printing***

If you are having trouble getting the correct braille when embossing, then try this:

- Go into the control panel on the Toshiba and select 'Toshiba hardware setup.
- You will see a list of hardware.
- If you don't find the hardware setups here, then go to the Start Menu—programs—Toshiba utilities and you will see the hardware setups here.
- Select printer port—the selected port should probably be 'standard bi directional'.

Prepared by Madeline Bailey

## **Set Up For Versapoint Braille Printer To A Toshiba Laptop Computer With Windows 98**

The Toshiba needs to be configured as follows:

1. Go into Duxbury under the Global Menu
  - Go to Embosser Setup
  - Choose Versapoint from the list and make sure that the LPT 1 port is selected
  - Change settings for line length, etc., at this time, then close Duxbury
  
2. Open 'My Computer' and double click on the Control Panel
  - Double click on 'Toshiba Utilities' (it may also be listed as 'Toshiba Hardware'). If you don't have either of these folders in the control panel then you must load them from your Win 98 system
  - Select the 'parallel port' or 'printer port' tab--choose standard bi-directional—click on 'Apply' and close
  
3. The Versapoint should be set at the factory default setting (0)

Prepared by Madeline Bailey /2001

## Set Up For Romeo Braille Printer to a Toshiba Laptop

*Note: cover the low paper indicator with masking tape.*

**The Toshiba needs to be configured as follows:**

1. Go into the control panel and select Toshiba hardware setup  
You will see a list of hardware. Choose printer port.  
If you do not find the hardware setups here, then go to the Start Menu—programs—Toshiba utilities and you will find the hardware setups here.  
Choose printer port **standard bi directional** should be selected
2. Go into printers and install new printer—choose generic
3. Now open Duxbury  
**Under the menu 'global' choose embosser setup**  
**Choose Windows device—Generic device**

**The configurations for the Romeo when using the Toshiba are the Romeo's default configurations.**

- |                          |             |
|--------------------------|-------------|
| 1. Turn Romeo on         |             |
| 2. Go off line           | <b>OL</b>   |
| Go to service menu       | <b>0.0E</b> |
| Restore default settings | <b>95E</b>  |
| Reset embosser to online | <b>1E</b>   |

**Now you are ready to turn your computer on. Open the file that you want to print. Translate it to braille in Duxbury and print to embosser.**

### ***Suggested Duxbury embosser setup***

Max char per line	32
Max lines per page	25
Desired char per line	32
Desired lines per page	23
Top margin	2
Binding	0

Prepared by Madeline Bailey

## Set Up For Romeo Braille Printer To A Braille 'N Speak

*Note: cover the low paper indicator with masking tape*

First, you need to set the menu in the Romeo Braille Printer:

- |    |                                         |      |
|----|-----------------------------------------|------|
| 1. | Go off line                             | OL   |
| 2. | For Braille n' Speak you need<br>Menu 2 | 0.2E |
| 3. | Hardware handshake on                   | 8.1E |
| 4. | To set these settings to default        | 1.0E |
| 5. | Return to top of line                   | 1.1E |

Now turn the printer off.

**Hook up the cables from the serial port on the Romeo Braille Printer to the Braille 'n Speak.**

Turn the Braille 'n Speak on.

- |    |                          |                                                                                                                                                  |
|----|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Open status menu         | ST chord                                                                                                                                         |
| 2. | Set the menu as follows: | 9600 Baud<br>no parity<br>8 data bits<br>1 stop bit<br>hardware handshake on<br>line length 40<br>top margin 0<br>left margin 0<br>page length 0 |
| 3. | Exit the status menu     | E chord                                                                                                                                          |

Turn the Romeo Braille Printer on.

Open the file that you want to print from the Braille 'n Speak.

- |    |                           |         |
|----|---------------------------|---------|
| 1. | Go to the top of the file | L chord |
| 2. | Send message to print     | T chord |
| 3. | Print in braille          | B       |

If at any point you want to stop the printing you must first send the message to the Braille 'n Speak to abort printing by doing a Z chord (twice). Then you must clear the buffer in the printer by:

- |    |                            |      |
|----|----------------------------|------|
| 1. | Going off line             | OL   |
| 2. | Indicate menu              | 0.2E |
| 3. | Go back to the top of line |      |

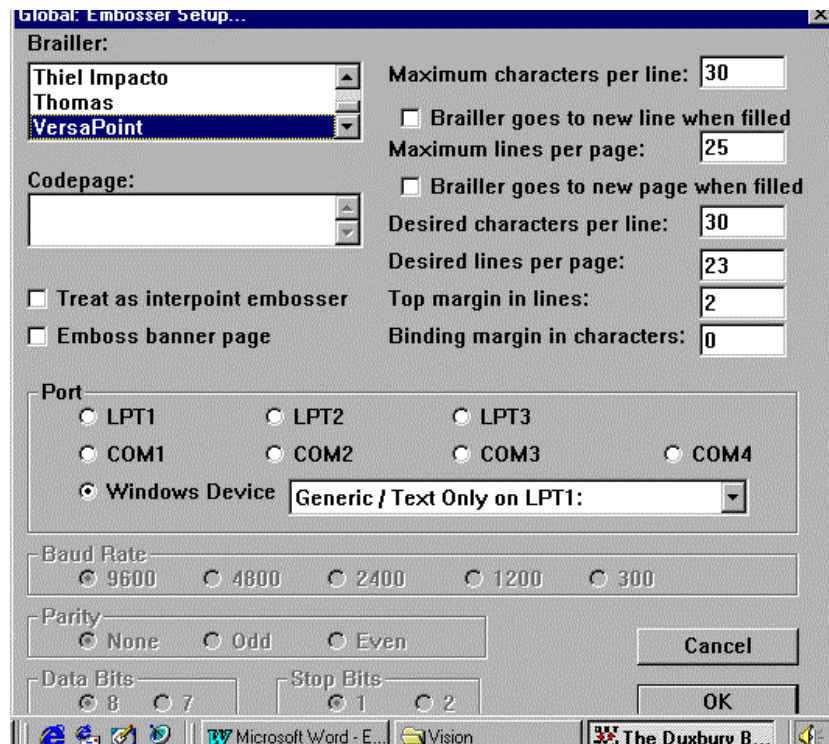
## Set up for a Versapoint Braille Printer to the IBM Desktop

The IBM needs to be configured as follows:

1. Go into the control panel – into printers and select generic printer.
2. Open Duxbury and go into the Global Menu.  
Open the Embosser Setup menu.  
Select Versapoint from the top pull down menu.  
Go to the 'Port' configurations menu and choose 'window device'.  
Beside the 'window device' selection is a pull down menu. Pull this menu down and choose 'generic/text only on LPT1'.
3. The character settings, etc. that usually work with these two units are as follows:

Maximum characters per line	30
Maximum lines per page	25
Desired characters per line	30
Desired lines per page	23
Top margin in lines	2
Binding margin	0

Prepared by Madeline Bailey



## Exploring Duxbury's Capabilities for Mathematics

Resource Development Project  
November 1998  
by Madeline Bailey and Constance McAvoy

### ***Duxbury Strengths:***

1. Braille Documents that are produced can be saved and produced again at a later date.
2. A person who does not know braille can input math questions (using Duxbury math codes) and translate this to braille for the student. However, the nemeth should be checked at some point by a braille interpreter.
3. For more advanced math, it is possible to six key entry nemeth in a Duxbury document which produces braille only.
  - A student can use six key entry to produce nemeth and get a braille copy. (If you work in six key entry, JAWS will not speak). We assume that the refreshable braille display would address this problem but we were unable to test this.

### ***Duxbury Weaknesses:***

1. Entry in Duxbury does not produce a print copy, thus the work cannot be read by the math teacher.
2. If you import a math file from Word to Duxbury, it produces the content in literal braille.
3. JAWS does not read the braille entry. The student cannot verify input through JAWS.
4. Some math function symbols need to be cut and pasted from the list of characters – not an easy task for a visually impaired student.
5. There are formatting problems with six key entry (i.e. tables and automatic wrapping).

Prepared by Madeline Bailey

# **Working In DUXBURY ver. 10.3**

**Working with Duxbury Templates**

**Working with Electronic Text**

**Duxbury Help Menu Tutorials**

**What's New in Duxbury 10.3**

## WORKING WITH DUXBURY TEMPLATES (ver. 10.3)

Templates created in Duxbury, store very specific information: document settings and styles. You cannot store any text in a Duxbury template. This makes them quite different from the typical template that you might create in a word processor such as Word.

Duxbury templates are basically confined to the Duxbury environment. It is possible to import a Word document into a Duxbury template, providing you have used compatible styles.

Why would you want to create a template in Duxbury? According to a Duxbury technician, the most common reasons for creating Duxbury templates are:

1. to number the first brailled page as page 1
2. to create a specific style for a specific task—for example: a skipped line between paragraphs

### Example 1:

Create a page numbering template that will number the first page of your brailled document as page 1

### How do you create this template?

1. open the Duxbury program
2. go to the file menu and choose 'new'—select the standard format template from the document settings menu—press ok
3. go to the document menu—choose 'create a template'
4. name your template (be sure to give your template a name that will clearly identify it for future use)—press ok

### How do you customize this template?

1. open the Duxbury program
2. go to the file menu and choose 'new'—select your new template from the document settings menu—press ok
3. go to the document menu—choose 'page numbering'
4. change the number in the box 'First page number to display' from 2 to 1—if you wish the page number to be in the bottom right corner instead of the upper right corner (default) then change this as well—press ok

### How do you save this template with the new customized style?

1. After customizing your template go to the document menu—choose 'create a template'
2. click on the name of the template that you have just made the style changes to
3. press ok—DBT will ask 'replace existing \_\_\_\_' and you should click on yes

4. you can now create a document in Duxbury in this template or you can import a Word document into this template and your first page will be numbered one.

Example 2:

Create a template that will skip a line between paragraphs

How do you create this template?

1. open the Duxbury program
2. go to the file menu and choose 'new'—select the standard format template from the document settings menu—press ok
3. go to the document menu—choose 'modify style'
4. choose para. from the list by clicking on it once—press ok
5. you will now see the codes—the codes should read:  
beginning codes: [p]  
the ending code will need to be changed to read:  
ending code: [sc1]  
press ok
6. save the modified style by pressing yes
7. go to the document menu—choose 'create a new template'  
name your new template and press ok
8. go to the file menu and choose 'close'—disgard this document by pressing 'D'

Applying your new template:

1. Open the Duxbury program
2. Go to file menu and choose new—select your new template—press ok
3. Go to layout menu and choose 'apply style'
4. Choose para. From the list and press ok
5. Now create your document by writing several paragraphs—remember that when working in Duxbury the keystroke for a new paragraph is Ctrl M (you may also import a Word document into this template if you wish)
6. Translate the document into braille Ctrl T --you should be able to see the skipped line formatting
7. Emboss your document Ctrl E

You have now successfully created two templates—one with a setting change and one with a style change.

NOTE:

You cannot modify or delete either of Duxbury's default templates—Standard Format and Textbook Format.

### Working with Electronic Text in Duxbury v10.3

Electronic text is simply a text version of written material in electronic format. In electronic format, text can be saved to disc or hard drive, imported into word processing documents, etc. Complete books, novels, essays and other materials are now available in this form.

There are various places to access electronic text, for example:

- From the Internet – almost all materials that are not currently under copyright are available on the Internet. To practice downloading electronic text you may wish to try the site [www.ldresources.com](http://www.ldresources.com) and link to their Electronic Text pages
- From scanned materials translated with OCR software
- From PRCVI or other organizations /resources

Duxbury makes braille translation of electronic text (“etext”) and text from a web page quick and easy. This is a great feature now that electronic text is becoming more widely available.

#### How to import electronic text into Duxbury:

1. Access electronic text and save it as a text file or save a web page as an html file in a folder of your choice on the hard drive. You will usually have the option of saving either way, under the ‘Save as type’ pull-down menu (Alt-F, A, tab until you hear ‘Save as type’ and down arrow to either ‘text file’ or ‘html’ and hit Enter to select your choice)
2. Launch Duxbury, then open (Ctrl-O) your saved electronic text file from the folder where you saved it previously. Duxbury will usually automatically import the text
  - in either a text format - Formatted text (Windows)
  - or in an html format – SGML/ICADD/HTML

When opening an html document, in the **Import File** dialogue box, choose the **Import Filter: SGML/ICADD/HTML** (Ctrl-O, tab to Import Filter box, down arrow to SGML/ICADD/HTML, hit Enter)

Note: Sometimes when importing text from an html format you will have strange lines of text that represent formatting and graphic items on the web page that will not make sense in a text format. If it is possible, you may wish to edit the text to ‘clean it up’ before translating and embossing the file

3. Translate the document (Ctrl-T) as usual, and emboss

**DUXBURY ver. 10.3  
HELP MENU TUTORIALS  
THAT WE FOUND VERY HELPFUL**

**OPEN THE DUXBURY PROGRAM  
GO TO THE HELP MENU  
GO TO THE TRANSCRIBER'S GUIDE (NEW)**

**For our section on Word Styles and Duxbury:**

**Chapters:**

**Chapter 1—Working With Styles**

**Chapter 3—Creating MS Word Documents for Braille Translation**

**Appendices:**

**Appendix B—MS Word Styles**

**For our section on Templates:**

**Chapters:**

**Chapter 2--Working With Templates**

**Other interesting reading:**

**Chapters:**

**Chapter 6—Formatting according to BANA Standards with DBT**

**Appendices:**

**Appendix F—DBT for Windows Shortcut Keys**

**WHAT'S NEW  
IN  
DUXBURY ver. 10.3**

## **NEW WITH DUXBURY ver. 10.3 IMPORTING TABLES**

Duxbury have indicated to us that you can now import 'tables' created in Word into the Duxbury program ver. 10.3, however, they import in a 'stair step' format.

For example: cat

food

dog

Even though Duxbury are referring to this as a new feature of Duxbury ver. 10.3, it is our opinion that this is still not an effective representation of converting table information. As a matter of fact it would be rare that the information from a table would convert to a 'stair step' format and still maintain the context of the original table.

## **NEW WITH DUXBURY ver. 10.3 IMPORTING ITALIC AND BOLD WORDS**

Italic and bold will now import from Word to Duxbury, however there was a programming error with the use of the italic indicator with a sequence of four words. The fix for this is on the Duxbury site at the following address:

[www.duxburysystems.com/download.asp#updates](http://www.duxburysystems.com/download.asp#updates)

The fix is called—DBT Win Service Release 1 (dated 2001-4-18) for ver. 10.3 This fix “corrects the number of words to be treated by double italic indicators”.

**Note:**

When installing this fix on your computer make sure that you extract it to the Duxbury program on the ‘C’ drive and not DBT docs. The password is: pre59adjspec

### **IMPORTING A WORD DOCUMENT INTO DUXBURY VER. 10.3 THAT CONTAINS ITALIC OR BOLD WORDS**

1. Italic and bold words will import from Word to Duxbury correctly providing you have installed the Duxbury fix (2001-4-18) onto your computer into the Duxbury program ver. 10.3.
2. The italic and bold words must be within regular text in your Word document in order for Duxbury to recognize them as such. Duxbury will not recognize italic or bold words that stand alone in a Word document.

## **Section 4: Electronic Resources**

This section will look at access to print that is in electronic form. This involves E-Text which are books on disk, encyclopedias on computer CD-ROM and textual information from the World Wide Web or Internet. The focus of this section is on the JAWS user but there are also some notes for the large print user who uses Zoomtext, Magic or Write OutLoud. Each of the three components of this section will be considered separately. Although each component shares many features with the other two by considering them separately it is hoped that they will clearly provide all the relevant information.

### ***E-Text – An Introduction:***

Students who are blind require access to alternate format, digital, electronic text materials accessible through speech, refreshable Braille and/or magnification. E-text, or electronic text, is a computer readable electronic file that duplicates a physical, print text such as a textbook. E-text is strictly text. There are many types of e-text including ASCII or Text (.txt), Rich Text Format (.rtf), Word Perfect (.wpd) and Word (.doc). Most of the e-text produced for PRCVI comes in ASCII, Word Perfect and Word. Graphic information (pictures, charts and graphics) found in the print textbook should be made available to the student. PRCVI provides an accompanying tactile diagram booklet(s) for many titles. If another supplier provides e-text without tactile diagrams and if it is determined that these graphics are necessary for the students' understanding, then they should be made available. Students proficient with computer technology can create their own e-text using a scanner and appropriate OCR software (e.g. Arkenstone Open Book or Kurzweil)

### ***Prerequisite to using e-text:***

Student needs to have basic computer and word processing skills. They also require basic operating skills for their screen reader (e.g. JFW 3.7) and/or their screen magnification program (e.g. Zoomtext Level 2 or Magic). Braille notetakers (e.g. Braille 'n Speak, BrailleLite or Braille Note) may also be used to access e-text.

### ***Equipment necessary***

- computer with enough hard drive space to download an e-text book
- word processing software (MS Word or Write Outloud ver. 3) that can read e-text files. Note that Wordpad is not sufficient for e-text files
- screen reading and/or screen magnification software technology or
- Braille notetaker with enough space to upload the e-text file(s).
- e-text materials (allow a minimum of 5 months production time for e-text ordered from PRCVI)

### **Necessary Team Support**

- Positive attitude to the use of e-text
- Competency in using hardware and software
- Basic troubleshooting skills
- Sense of humour

### **Classroom Implementation Strategies:**

- Start young – share simple stories, for example, classmate stories can be made available on disk (remember to include descriptions of pictures and graphics and/or construct a supplementary tactile diagram booklet)
- Read beginning “chapter” books in e-text
- Provide instruction concerning copyright issues
- Provide a Braille or Large Print hard copy to complement the e-text when the student is learning to use e-text
- Encourage the experienced user to choose the medium that best suits the specific task.
- Keep the “original” safe. E-text should be saved on the students hard drive (C:\) in the subject folder
- E-text is often provided in many individual files. It may be necessary to provide instruction on how to merge and append these files in order to build the book (see section Using E-text Textbook with MS Word 2000)
- Provide instruction concerning format issues with respect to Table of Content, Page Number Location, and Graphic Descriptions
- Use the Find feature to locate page, keywords, and markers
- Use copy and paste features to input information into a new document

### **User Profile Checklist:**

In order to successfully use e-text the following skills are necessary:

1. View and open files from a floppy disk.
2. Navigate the Treeview and Listview in Windows Explorer.
3. Create new folders in Windows Explorer.

4. Rename files in Windows Explorer.
5. Copy and paste documents within Windows Explorer.
6. Understand extensions (.doc .txt .wpd .rtf).
7. Open, read and save Word and/or Word Perfect documents.
8. Open, read and save Notepad and Wordpad documents.
9. Copy and paste (multiple) e-text file(s) contiguously from the floppy disk into a single file (merge or append).
10. Use the Find Text command to navigate the textbook file.
11. Move (within the application) between the textbook file and files made for notes and assignments.
12. Move between application programs.

### **Using an E-text Textbook with MS Word 2000 and JFW 3.7**

For demonstration purposes we will use Across the Centuries by Beverly J. Armento et al.

#### **Opening and copying your e-text textbook to the "subject" folder:**

- Turn On the Computer.
- Put the E-text disk in A:Drive.
- Go to Start Menu (Ctrl + Esc), select Programs (P), select Windows Explorer and press enter.
- Select C:\ and open the File menu. Select "New" and choose "Folder". Name the folder according to the subject.
- Make a new folder within the subject folder and name it "textbook"
- In Windows Explorer select 3 1/2" Floppy (A:) by using up arrow and press enter. All the files on the A drive will be shown. Select all of the files on the disk (Ctrl + A). Copy them into the "textbook" folder.
- Open a new document in Word.
- Return to Windows Explorer (Alt+Tab). Copy each file from the "textbook" folder and paste it into the new document. Make sure that the cursor is at the bottom of the new document after each file is pasted so that text is placed contiguously.
- Save the new document (which now contains the collated book) with the book title into the subject folder.

- Delete the “textbook” folder

### ***Reading E-Text in Large Print Format:***

- Open the collated file
- To read the book in Large Print using MS Word choose Select All from the Edit menu
- Go to the Font listbox and select the desired font size
- Hit enter
- E-Text may also be read in Large Print Format using screen magnification software

### ***Inserting a Marker to save your place***

- Insert a marker to find your place easily the next time you open the file by typing in a code word (nonsense word e.g. lookingfor) at the spot where you would like to open the file next time.
- Save file. (Ctrl S)
- When you open the file the next time use the “find” command (Control+F) on the code word and the file will open at that place. Do not use common words as they will be found in other places in the file.

### ***Saving and Closing E-Text File***

- When finished open the File Menu and choose Save or Save As. Make sure you are saving in the subject folder

Note: Keep your original disks safe. Use them only to copy onto another disk or hard drive, not as working disks. You can lock a disk by opening the disk tab.

## **Grolier CD-ROM Encyclopedia**

### **Framework**

#### ***Description of Student needs:***

Our low-vision and blind students need an independent method of accessing resource material for research projects. With the availability of appropriate CD-

ROM multi-media resources like the Grolier 1999 or 2000 Multimedia Encyclopedias, coupled with access to the Internet, computer-centered "information retrieval" promises to provide unencumbered access for these students.

A large print user may use many different CD-ROM encyclopedias. The screen review or JAWs user is limited to Grolier 1999 or 2000 since these are the two versions that are accessible to JAWs currently. JAWs is screen review software for Windows that allows a blind user to browse, find and copy information contained in these non-print, multimedia resources.

***Prerequisite skills to use the technology independently:***

- Good JAWs skills for navigation within Win ME/98.
- Practiced ability to switch between open applications (JAWs, Word & Grolier).
- Effective word-processing with JAWs skills for navigating, selecting, copying and pasting.
- Familiarity with multiple pane pages. Windows Explorer with its List and Tree views are an example of page with multiple panes.
- Understanding of multiple cursors and how/when to use them.
- If the student is going to use the Internet search features of Groliers, then some limited familiarity with JAWS access to the Internet.

***Equipment Needed:***

- Windows ME or 98 based computer
- Word-processing program, MS Word for Windows is the most accessible to JAWs
- JAWs 3.7 (patch .087) screen review software.
- Internet Explorer 5.5
- Grolier 1999 or 2000 Multimedia CD-ROM Encyclopedias.
- If the student is going to use the Internet search features of Groliers then Internet access in place (LAN or Modem)

***Team support needed to ensure technology would be implemented successfully:***

- Good JAWs skills with respect to complex (multi-media) screen presentations.
- Introduce JAWs & Windows concepts.
- Set up Grolier's before student tries to use software. Out of the box, it is not fully accessible to the JAWs user.

- If the student is going to use the Internet search features of Groliers then setup Internet Explorer as the web browser for Grolier.

**Classroom implementation strategies:**

- Show student how to access the extensive help documentation contained within JAWs. (Open JAWs; Open Help Topics; Open Contents Page; Open Popular Applications with JAWS Book; Open Reference & Educational Book; Open JAWs Specific Keystrokes. For an explanation of each keystroke & some related information Open *JAWs Specific Keystrokes* and then Open link *Detailed Description of Keystrokes*.)
- Practice word-find and subsequent cut & paste sequences within Word using JAWs.
- Practice sentence and paragraph moves as above.
- Use CD ROM resources for basic search exercises.
- Use "voice only" component of JAWs and have student paraphrase or make sequential notes from found information, switching to word-processor to write.
- Capture single sentences from found information and copy & paste to word-processing program.
- Coach user in keeping "keyboard command sets" differentiated as they switch between programs. (JAWs vs Windows vs Groliers)
- Access sound clips and recordings from within Groliers.
- Copy paragraphs for subsequent editing and manipulation.
- Access Internet with structured access provided by Groliers.

**Common barriers or challenges that might occur:**

- Some features of Groliers are completely graphic (not text) and as such are not accessible to JAWs.

**Tasks that the VI Teacher will do at this station:**

- Undertake the steps required in a basic research project using Groliers 98 and its "automated" Internet search capabilities.
- Copy, paste and manipulate selected text.

**Why use the Internet?**

JAWS 3.7 is designed to work seamlessly with the Internet using Microsoft Internet Explorer ver. 5.5.

A great deal of useful information is available online to students who are blind. This includes information that is not otherwise available in any other medium.

Examples of this information are:

- Newspapers and magazines

- E-text books
- Source documents and reference material needed for reports and assignments

Pre-requisite skills:

- Familiarity with basic computer operation
- Familiarity with JAWS including multiple cursors and when to use them
- Familiarity with Internet Explorer 5.5
- Familiarity with a word processor

Equipment Needed:

- Pentium computer with modem or network card installed and configured
- Access to the Internet through an internet service provider (ISP) or network

About JAWS and the Internet:

- The student has choices as to how they access web pages. The two basic choices involve whether or not to reformat the page.
- If the page is reformatted all graphics will disappear, links will appear separately, and the text (with embedded links) will follow. JAWS will announce links and frames as the student moves through the web page
- If the page is not reformatted and the virtual cursor is used, JAWS will read all aspects of the page including links and frames until it reaches the end of the page. Graphics will be retained. There is greater verbosity using the virtual cursor, however, it can be more difficult to navigate the page if the automatic reading done by the virtual cursor is stopped.
- Explanations of JAWS commands related to Internet Explorer 5.5 can be found within the JAWS Help files. To find these commands open JAWS Help. Then open the "Contents" page. Open "Popular Applications with JAWS". Open Internet. Open Internet Explorer 5. Open JAWS specific keystrokes. If additional detail is required open the "detailed description of keystrokes" link.

Internet Navigation:

- Use the TAB key to move through links on the page or use the Links Listbox to access them separately
- URL addresses can be inputted directly in the address field at the top of each page, rather than from the menu bar.
- JAWS will announce how many links and how many frames are present on each page when the virtual cursor is used
- The student can move back and forth between visited links using Alt + left or right arrow

Internet Concepts:

- Information is found on the internet using "Search Engines".
- The choice of search engines is important. Desirable features include: few graphics; options to search "any word", "all words", or "as a phrase";

- Meta-search engines search other search engines to find more sites relevant to the search query
- Stand alone programs such as Copernic ([www.copernic.com](http://www.copernic.com)) search many other search engines and provide a list of query results in the form of links. Choosing a link opens Internet Explorer and goes to that website. All search results are saved within the program for future reference.
- Relevant web material can be copied from Internet Explorer (Edit menu) into a word processor and saved for future reference

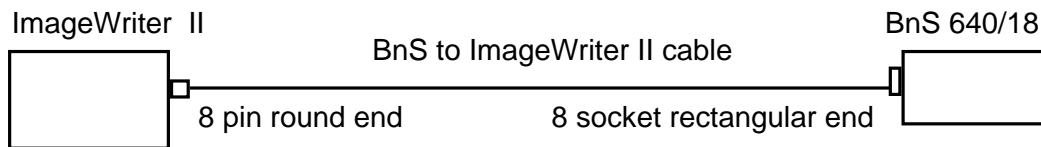
## Demonstration Session: Plugging It All Together

### Connecting a Braille 'N Speak 640

**To connect a Braille 'n Speak or Braille Lite 18 to an Apple ImageWriter II : recommended**

The Apple ImageWriter II printer is a Serial, Dot Matrix, print printer. Use a **special order, BnS 640 to ImageWriter II cable** (available from Aroga part #BNS-004, \$50.00).

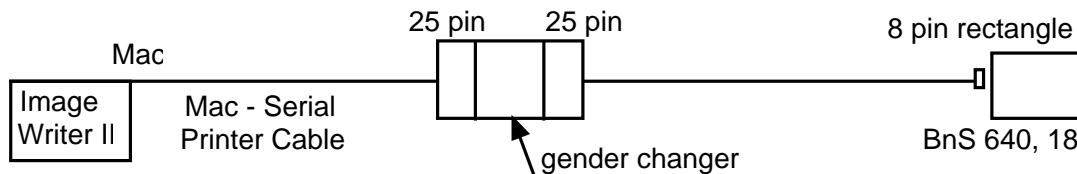
- Cable has an 8 socket, female, rectangular plastic plug at one end and a round, Mac-like, 8 pin Mini DIN, male plug at the other end.
- Plug the 8 socket, female, rectangular, plastic plug at one end into the Serial port on the Blazie note taker.
- Plug the other end that is a Mac-like, 8 pin, Mini DIN, male plug into the ImageWriter II.



**To connect a Braille 'n Speak or Braille Lite 18 to an Apple ImageWriter II : not recommended**

The Apple **ImageWriter II** printer is a Serial, Dot Matrix, print printer. Use a standard **BnS Serial Interface cable** provided with BnS 640 or Braille Lite 18.

- Plug the 8 socket, female, rectangular, plastic plug at one end into the Serial port on the Blazie note taker.
- Plug the other end (DB-25, pin, male plug) of the Serial Interface cable into the Female to Female gender changer (provided with note taker in the BnS Serial Interface Kit [6 pack]).
- Plug into the other female end of the gender changer the DB-25 end of a **Mac to Serial Printer cable**.
- Then plug the Mac-like, 8 pin, Mini DIN, male plug into the ImageWriter II. This cable is not recommended since it is composed of 2 cables and one adapter that could come apart and because the cost is as much or more than the specialty cable.



***To connect a Braille Lite 40 to an Apple ImageWriter II:***

The Apple **ImageWriter II printer** is a Serial, Dot Matrix, print printer.

- Use a special order, **BL40 to ImageWriter II cable** (available from Aroga part #INS-004, \$50.00) (Cable has a round, Mac-like, 8 pin Mini DIN 8 pin, male plug at both ends).
- Check and see if Mac or IIgs to ImageWriter II cable will work.

***To connect a Braille 'n Speak 640 to a Epson or Raven or other Parallel, dot matrix printer: (BNSP-1) - Traditional***

Since the 640 does not have a parallel port, you need to use a special order Serial to Parallel converter. For this reason many schools have used an Apple ImageWriter II printer since it is serial. If a serial printer is not available, then parallel printers can work with a 640 as long as a special order Serial to Parallel converter is used. Traditionally we have used a **Serial to Parallel converter** available from Aroga (Part # BNSP-1, \$90.00).

The BNSP-1 cable is made up of two separate cables.

- The first cable has an 8 socket, female, rectangular, plastic plug at one end and a DB-25, socket, female plug at the other end.
- The second cable is a short, but conventional cable that is readily available in stores. It is an **IBM computer to Centronics Parallel printer cable**. It has a DB-25 pin, male plug at one end and a Centronics Parallel plug at the other end.

Connect the two cables that make up the BNSP-1 together.

- Then connect the 8 socket, female, rectangular, plastic plug to the serial port of the 640.
- Then connect the Centronics Parallel end to Parallel plug on the printer.
- Fasten the butterfly clips to secure the Centronics Parallel end to the printer.

***To connect a Braille 'n Speak 640 to a Epson or Raven or other Parallel, dot matrix printer: (SP-200) - New***

The SP-200 is a new, **Serial to Parallel converter** that appears to be superior to the BNSP-1. It is significantly cheaper and may last longer as it plugs directly into the print printer and doesn't get banged around as much as the BNSP-1.

Use the standard **BnS Serial Interface cable** provided with the BnS 640 or Braille Lite 18 to connect the two devices.

- Plug the 8 socket, female, rectangular, plastic plug at one end into the Serial port on the Blazie note taker.
- Plug the other end (DB-25, pin, male plug) of the Serial Interface cable into the DB-25, socket, female plug of the SP-200.
- Plug the Centronics end of the SP-200 into the Centronics port of the printer.

## **Connecting A Windows Laptop to A Parallel Print Printer**

- Windows is most commonly used with parallel, print printers like Epson, Raven and others.
- Get an **IBM computer to parallel printer cable**. It has a male DB-25 plug at one end and a Centronics, parallel plug at the other end.
- Plug the DB-25 end into the printer (LPT-1) port on the back of the laptop. Ensure that the screws are holding, but not tightened. Plug the Centronics end into printer. Secure the “butterfly” catches.
- Turn on printer and if you haven’t already done so install new printer in Windows. (Start Menu - Settings - Printers - add printers).
- Ensure that the printer is on line and has paper loaded correctly.
- These directions can be used without any changes with a Windows Desktop. To use a Parallel, Braille embosser with JAWS Laptop, follow the same procedure, except Install Printer within Duxbury for Windows and not Control Panel - Printers.

## **Switch Boxes: Supporting Independence & Reducing the Confusion**

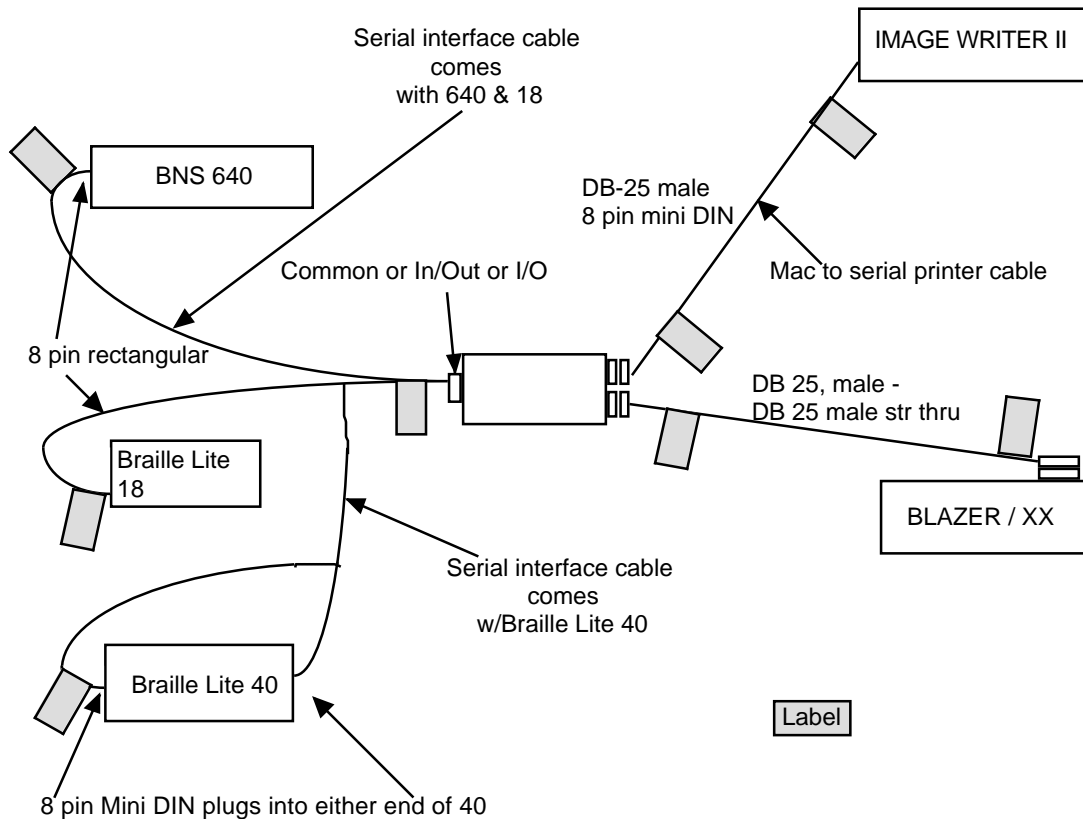
### ***Problem:***

The gordian knot of cables that accompanies equipment for the visually impaired is often confusing for sighted people. For the Braille user it can be very intimidating. The use of a switch box can often allow for successful, independent use of the equipment by the Braille user. The Switch Box (sometimes referred to as an A/B Box) reduces the need to plug and then unplug the cables between your note taker, computer and your printer(s) every time you want to change devices.

### ***Notes:***

- There are many possible combinations of equipment and how to connect them. No one way is the right way. The simplest, cheapest, most durable and with the least amount of changing settings is almost always the best way, but not the only way.
- Assemble all of the equipment first. It is easier and more cost effective to design in a connection at the start, rather than to add one in later.
- Usually, reserve the parallel interface for print, printers, since that is sometimes the only print, printer that an IBM will recognize.
- Get a Switch box that is as simple as possible. Make sure that it is a mechanical, 25 conductor, all switched, switch box (no buffer; no automatic, no smart, no electronic features).
- Once you have put it all together and got it working - diagram the setup and label all your cables and components. Also record all the settings in all devices (Status Menu etc.).
- All cables should be shielded and good quality with screws / nuts so they can be fastened together.

## Blazie Notetaker Using A/B Switch Box to Print or Emboss



### Notetaker Switch Box - Serial

- Connect BNS 640 or Braille Lite 18's serial port to Common plug on switch box. You will need to use the **Serial Interface cable** that comes with the 640 or 18. Plug the 8 socket, rectangular end into the Serial port on the 640 and the DB-25, pin, male end into the common (In/Out of I/O) plug on the switch box.

Or

Connect the Braille Lite 40 Serial port to the Common plug on the switch box. You will need to use the **Serial Interface cable** that comes with the Braille Lite 40. Plug the 8 pin, Mini DIN, plug into the Serial port located on either end of the Braille Lite 40. Plug the DB-25, pin, male end into the Common plug on the switch box.

- Connect the “A” plug on switch box to the ImageWriter II, print printer. You will need a **Mac to Serial Printer cable**. Plug the DB-25, pin, male end into the “A” plug on switch box. Connect the 8 pin, Mini DIN, (Mac like) plug into the ImageWriter II.
- Connect the “B” plug on switch box to the Serial port on the Braille Blazer (or the Romeo Braille) Printer. You will need a **DB-25 pin male to DB-25 pin, male straight thru cable**. Plug one end into the “B” plug on the switch box. Connect the other end to the serial or RS232 plug on the Braille embosser. Make sure that the embosser is set to Serial and not Parallel.
- Label the “A” setting Apple ImageWriter and the “B” setting Braille, Blazer or Romeo Braille. It is arbitrary what these are labeled. Choose something that is meaningful and easy to remember for the student.
- Turn on and test that you can both emboss and print from the Blazie notetaker. Since this is using a serial interface you most likely will not require any special power up sequences. If it doesn't work ensure that you can print directly from the Blazie notetaker to each printer in turn.

*Note:*

*You will want to set ImageWriter and Blazer to the same Serial setting so that you don't need to change the Status Menu settings each time you switch printers. Most efficient is to start with Default Settings and then arrive at common settings with the fewest changes.*

<b>Braille Notetaker Default Settings</b>	<b>Blazer Default Settings</b>	<b>ImageWriter II Default Settings by dip switches</b>
(Warm Reset)		
Baud rate 9600	Baud rate 9600	Baud rate 9600
Bits / char 8	Bits / char 8	Bits / char 8
Stop bits 1	Stop bits 1	Stop bits 1
Parity <u>N</u> for none	Parity <u>N</u> for none	Parity <u>N</u> for none
Handshaking software	Handshaking software	Handshaking <u>software</u>

Append line feed when transmitting On.

*Note: is no longer required with newer Blazie notetakers*  
change to serial port  
change voice to off

***Typical Values***

Set Print line length 72

Set left margin 8

Set lines per page 56

Set top margin 4

Leave at defaults

Set Braille line length 32

Set Braille left margin 2

Set Braille lines per page 25

Set Braille top margin 1

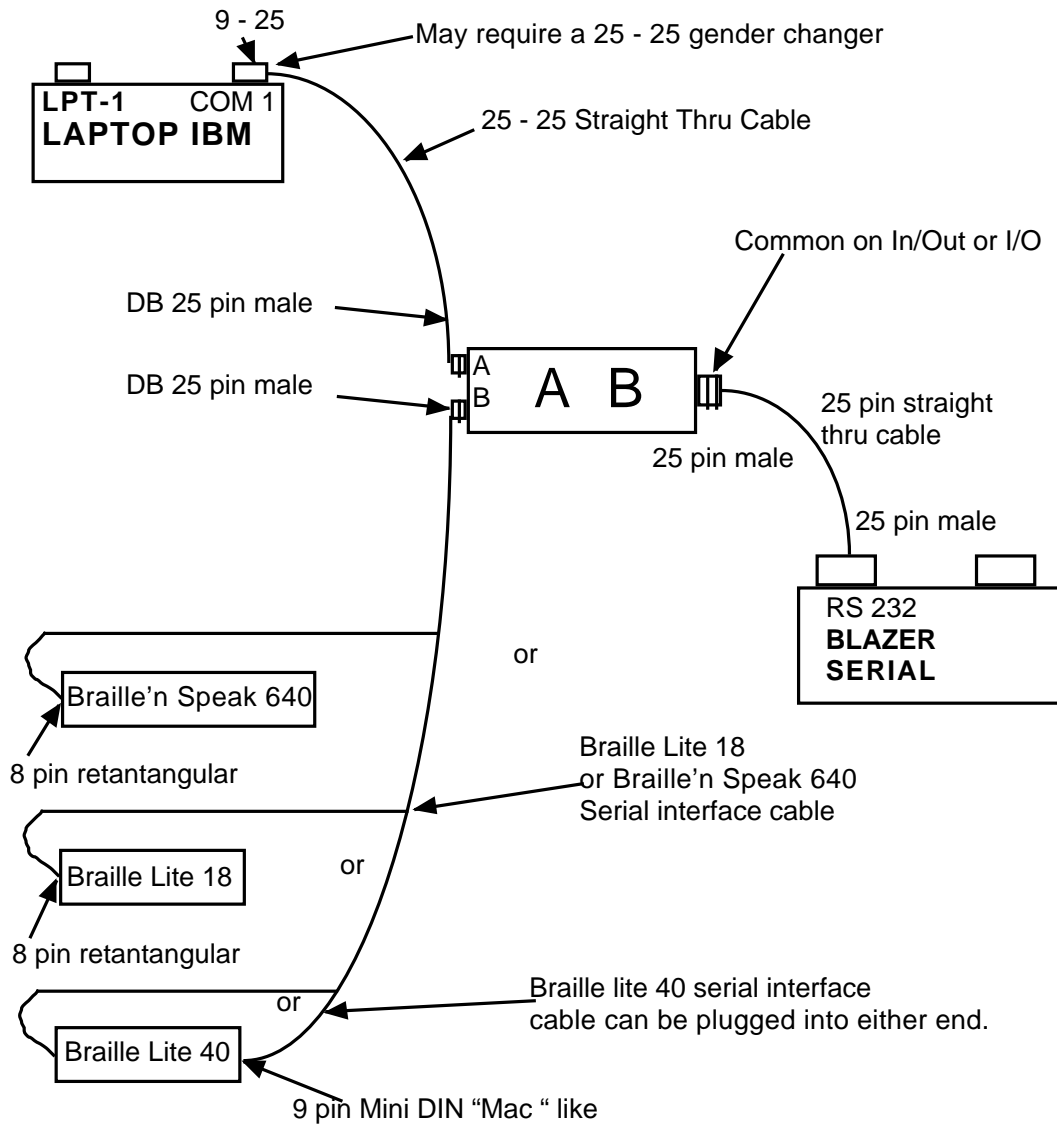
Leave at 0

Leave at 0

Leave at 25

Leave at 0

## Laptop & Braille Lite 18/40 640 W/Serial Braille Printer



## Braille Switch Box - Serial

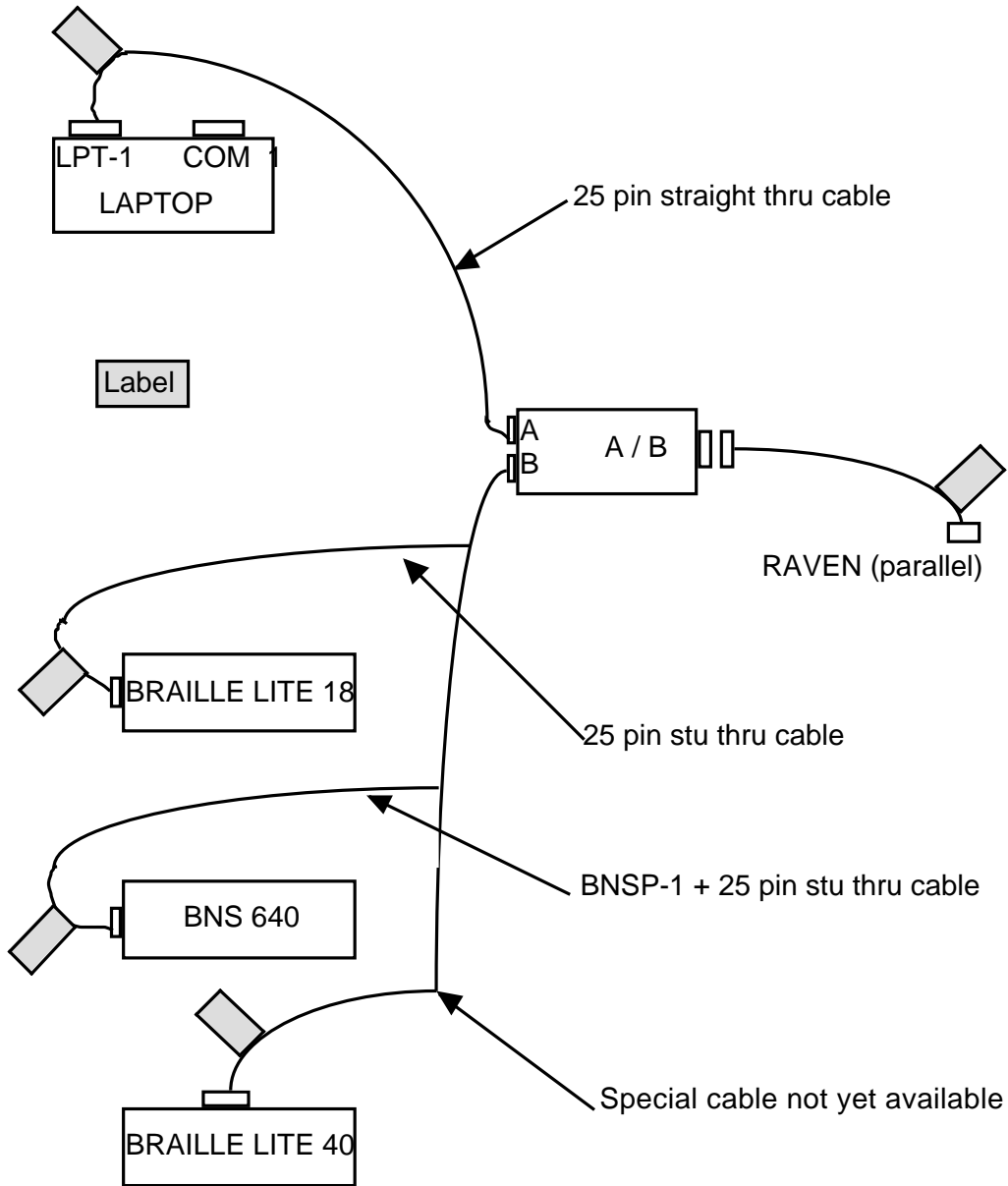
- Connect the laptop's Serial port (Com 1) to the "A" plug on switch box. You will need: a 9-25 adapter (look in Braille 'n Speak / Braille Lite Serial Interface kit - also known as a 6 pack) and a **DB-25 pin, male to DB-25 pin, male straight through cable**. (not null modem cable) Connect the 9-25 adapter to the 9-pin male Serial port. Connect the **straight through cable** to the "A" plug on the switch box.
- Connect the Braille 'n Speak 640 or Braille Lite 18 from the Serial port 8 pin rectangular to the "B" plug on the switch box. You will need: the **BnS Serial Interface cable** that comes with the 640 or 18. It has an 8 socket, rectangular, female end at one end and a DB 25, pin, male end on the other end.

Or

Connect the Braille Lite 40 from the smart Serial / Disk drive port (either end of the Braille Lite 40) to "B" plug on the switch box. You will need the **BL-40 Serial Interface cable** that came with the Braille Lite 40. It has a 9 pin, mini DIN "Mac-like" plug at one end and a DB-25 pin male connector at the other end.

- Connect the **DB-25 male to DB-25 male, straight through cable** from the Common plug on the switch box to the serial (RS-232) plug on the Braille printer. Note the Common plug may be labeled In/Out or I/O as well.
- Label the "A" switch setting Laptop or something meaningful by student. Label the "B" setting Braille 'n Speak, Braille Lite or something else that is meaningful to student(s).
- Turn on and test that you can emboss from both devices. In most cases you will not need to power up in any specific order. Just ensure that the AB switch setting is appropriate, that the Braille printer is on line and then Print. If that doesn't work, turn everything off. Connect directly and emboss. In a few cases you will find it necessary to observe a specific power-up routine but this is unusual for Serial printing.
- Label all cables-both ends. Diagram the complete system and record all settings required e.g. Duxbury, Blazie notetaker Status Menu & Braille embosser settings.

## Laptop & Blazie Notetaker Sharing Parallel, Print Printer



### Print Switch Box - Parallel

- Connect the laptop's Parallel (or printer) port (LPT-1) to the "A" plug on the switch box. You will need a **DB-25, pin, male to DB-25, pin, male straight through cable**.

- Connect the Braille Lite 18's Parallel port to the "B" plug on the switch box. You will need a **DB-25, pin, male to DB-25, pin, male straight through cable**.

*Note: the Print command is T-Chord and then a second T-Chord to print to a Parallel print printer.*

or,

Connect the Braille Lite 40's Parallel port to the "B" plug on the switch box. You will need:

- a special order cable **that is not yet available**. You will need a Braille Lite 40 parallel plug to DB-25, pin, male cable.

or,

Connect the BNS 640 to the "B" plug on the switch box. In order to do this you will need:

- a Special order cable Serial to Parallel converter (cat #BNSP-1, cost is \$90.00 available from Aroga) and a **DB-25, pin, male to DB-25, pin, male straight through cable**.

Connect the 8, socket, rectangular end of the BNSP-1 to the Serial port on the 640. Connect one end of the **DB-25, pin, male to DB-25, pin, male straight through cable** to the DB25 female end of the BNSP-1. Connect the other end of the **straight thru cable** to the "B" port on the switch box.

*Note: the Print command remains unchanged on the 640 it is "T-Chord" and then a "T".*

- Connect the Common or In/Out or I/O plug on the switch box to the Centronics, Parallel plug (the one with the "butterfly" latches) on the print printer. You will need an **IBM computer to parallel printer cable**. It has a DB-25 pin, male plug at one end and a Centronics Parallel plug on the other end.
- Label the "A" switch setting "Laptop" or something meaningful to the student(s). Label the "B" setting "Braille 'n Speak", "Braille Lite" or something else that is meaningful to student(s).
- Turn on and test that you can print from both devices. With parallel devices you may need to power up in a specific order. Test first to see if you can switch the setting on the switch box, turn on printer and then print. If it doesn't work remove the switch box and test that it will print directly from the laptop or the Blazie notetaker to print printer.

*Note:*

If you are using a parallel-pass-thru-printer (so that you can connect a scanner to the laptop without buying a PCMCIA, SCSI interface card) be advised that the switch box may not work and/or it may adversely affect the scanner's operation.

### **Braille Lite 2000 (18 )**

Manufacturer : Freedom Scientific, Inc. [www.freedomscientific.com](http://www.freedomscientific.com)

Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

The Braille Lite 18 is an electronic word processor with Braille input, an 18 cell refreshable Braille display, and speech output. It can input over 2000 pages of Grade 2 Braille and has a built-in reverse translator for automatic printing of documents in either Braille or print. It has cursor routing buttons, choice of 6 - or 8-dot Braille, and also has keys to facilitate direct input of dot-7 and dot-8 when entering ASCII Braille or foreign language notation. It also includes a talking clock, calendar, calculator, and telephone directory; the word processor includes a spell checker.

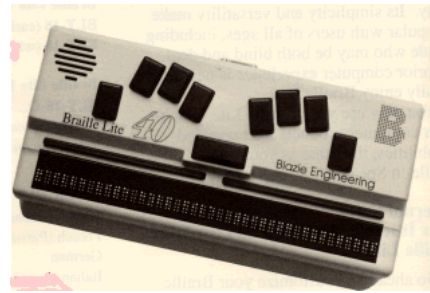


### **Braille Lite 40**

Manufacturer : Freedom Scientific, Inc. [www.freedomscientific.com](http://www.freedomscientific.com)

Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

The Braille Lite 40 is an electronic word processor with Braille input, a 40 cell refreshable Braille display, and speech output. It can input over 2000 pages of Grade 2 Braille and has a built-in reverse translator for automatic printing of documents in either Braille or print. It has cursor routing buttons, choice of 6 - or 8-dot Braille, and also has keys to facilitate direct input of dot-7 and dot-8 when entering ASCII Braille or foreign language notation. It also includes a talking clock, calendar, calculator, and telephone directory; the word processor includes a spell checker. The Braille Lite weighs 2 lbs. and has 768k RAM memory and 4MB ROM memory.



### **Braille Note**

Manufacturer : Humanware [www.humanware.com](http://www.humanware.com)

Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

Braille Note combines high quality Braille and speech. The BrailleNote features an infra-red port, internal modem, PCMCIA slot, serial and parallel ports. You can communicate electronically using BrailleNote's Pop-3 e-mail program, read documents in Grade 1 or 2 Braille. The BrailleNote comes in either 18- or 32-cell refreshable Braille display. It has a 21 - hour battery life.



### Clearview 700 & Spectrum SVGA

Manufacturer : Optelec [www.optelec.com](http://www.optelec.com)  
Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

The CCTV is a closed circuit television that enlarges text and graphics from a printed page. It allows people with low vision to access printed materials by displaying the enlarged image on a monitor. Through the use of a camera it magnifies the page up to 64x. It also allows for the foreground and background of the page to be modified if necessary. Monochrome or color display.



These models have the following capabilities: Split Screen , accepts computer input SVGA , compatible with both Mac & Windows computers but must use PC monitor.

Manufacturer: Telesensory  
Model: Aladdin  
Split Screen capability  
Accepts computer input SVGA  
Compatible with Windows computer

### Duxbury Braille Translator

Manufacturer : Duxbury Systems Inc.  
Local Distributor: Aroga Marketing Group

[www.aroga.com](http://www.aroga.com)

Duxbury Braille translation software ( Win or Mac platforms) allows you to create accurate Braille for textbooks, letters and other formats, regardless of your familiarity with Braille formatting rules. It includes an importer for Microsoft Word files, translation to Nemeth code mathematics and supports inclusion of embosser graphics files. Compatible with speech output and refreshable Braille displays.



### Jaws for Windows

Manufacturer: Henter-Joyce Inc.  
Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

Jaws for Windows is a screen reading software program for Windows and Windows NT. It automatically adjusts itself to the application program being used, tracking menus and color bars. Smart Screen speaks dialogue boxes, pop-up windows, error messages or other prompts that appear on the screen. A dual - cursor design lets you move freely about with the Jaws cursor, while the PC cursor remains ready to communicate with your application program. Other features include: built-in macro user-definable keys; single- handed access to important screen-reading function keys; ability to selectively read any



window on the screen. Jaws for Windows features support for Microsoft Internet Explorer , including the ability to read pages on the internet without reformatting and a links list dialog box. Jaws for Windows includes an enhanced “ Eloquence for JFW” software speech synthesizer, as well as the Microsoft text-to-speech engine. Dectalk Access 32 is also available as an addition.

### **Mountbatten Pro**

Manufacturer: Humanware Inc. [www.humanware.com](http://www.humanware.com)

Local Distributor: Aroga Marketing Group [www.aroga.com](http://www.aroga.com)

The Mountbatten Braille Pro is a standard Braille writer that incorporates an erase and correction feature, tabs, automatic margin settings, and memory. It has a silent Braille keyboard that enables users to Braille directly onto full size Braille paper or silently into a memory to print at a later time. The Mountbatten can be driven by an external keyboard for one-handed users or from a standard qwerty keyboard. It now has both digitized and synthetic speech; you can combine typing and touching braille with the audio reinforcement of real speech confirming the letter or dot combinations you have brailled. the synthetic speech enable a student to create an assignment , edit text , then produce a copy of the assignment in braille.

### **OmniPage Pro 10**

Manufacturer: Caere Corporation

Local Distributor: Educational Resources 1-800-220-0521

OmniPagePro is an optical character recognition (OCR) application for Windows and NT. It has the ability to translate character images into editable text. Scanners capture the image of a page and then digitize the image into a bitmap which can be stored, printed, and manipulated by a computer. The text cannot be edited by a word processor until an OCR program has processed the bitmap. New features of OmniPage Pro include improved recognition of poor quality documents, voice read-back, proofreader, spreadsheet handling, color support, integration with Microsoft Office, and can retain original page layouts.



### **Romeo Braille Printer**

Manufacturer: Enabling Technologies [www.brailler.com](http://www.brailler.com)

Local Distributor: Aroga Marketing Group  
[www.aroga.com](http://www.aroga.com)



There are 2 models: the Romeo 25 and the Romeo Pro 25. The Romeo 25 prints at a speed of 25 characters per second while the Pro 25 prints at a speed of 50 characters per second. They have a 40 character (standard braille) line, weigh 31 pounds , and use 20 to 100 pound form feed Braille paper. The Romeo 25 standard features include Dynamic Braille Scaling which lets you change Braille sizes even within a document , as well as, graphics in normal and high resolution.

## Vision Technology Vendor List

Aroga Marketing Group Inc. [www.aroga.com](http://www.aroga.com)

1611 Welch Street, North Vancouver, BC V7P 3G9

Phone: 604-986-7999

Fax: 604-986-7070

*Braille Blazer*

*Braille Lite 40*

*Braille 'n Speak*

*Duxbury*

*Jaws for Windows*

*Romeo Braille Printer*

**Blazie Engineering**

[www.blazie.com](http://www.blazie.com)

105 E. Jarrettsville Road, Forest Hill, MD 21050

Phone: 410-893-9333

Fax: 410-836-5040

*Braille Blazer*

*Braille Lite 40*

*Braille 'n Speak*

**Caere Corporation**

[www.caere.com](http://www.caere.com)

100 Cooper Court, Los Gatos, CA 95032

Phone: 408-395-7000

Fax: 408-354-2743

*OmniPage Pro*

**Educational Resources**

[www.edresources.com](http://www.edresources.com)

PO Box 45680, Surrey, BC V4A 9N3

Phone: 1-800-565-5198

Fax: 1-800-663-5093

*Educational Software*

*Grolier*

*OmniPage Pro*

*Microsoft Office*

**Freedom Scientific**

<http://www.freedomsci.com/>

Henter-Joyce, Blazie and Arkenstone have joined to form Freedom Scientific – creating assistive technology products for people with sensory and/or learning disabilities.

**Henter-Joyce Inc**

[www.hj.com](http://www.hj.com)

11800 31st Court N., St. Petersburg, FL 33716-1805

Phone: 727-803-8000

Fax: 727-803-8001

*Jaws For Windows*

**Optelec**

[www.optelec.com](http://www.optelec.com)

1832 Marie-Victoria Blvd., Longueuil, Quebec J4G 1T9

Phone (450) 677-1171 or (800) 665-3005 Fax: (450) 677-1462

*BrailleNote*