Figure 8.21 Camera Example 1 (Shop Sign)

The background color was simple and the contrast was good. I decided to open it from MaxReader OCR without using the image editor. The picture was saved as a JPEG (.jpg) file by the digital camera program. I opened the file directly from MaxReader by clicking **Open Image File** from the **File** menu. Since the picture was taken from an overseas Chinese region, I assumed that the text was in traditional Chinese characters. I clicked **Set Character Set** from the **Format** menu and verified that the setting was in **Traditional Chinese I**. After that, I dragged my mouse cursor to enclose the text in a rectangle and clicked the **Recognize Current Page** from the **OCR** menu to recognize the text (Figure 8.22).



Figure 8.22 Mark a text block in MaxReader for recognition

The OCR result did not look right at all (Figure 8.23). Only one text block should be in the output, but it ended up with six different blocks. Some characters were even treated as images and enclosed in red rectangles. One text block contained strange spots and another text block was almost blank. It appeared that the OCR was not able to handle this color picture.
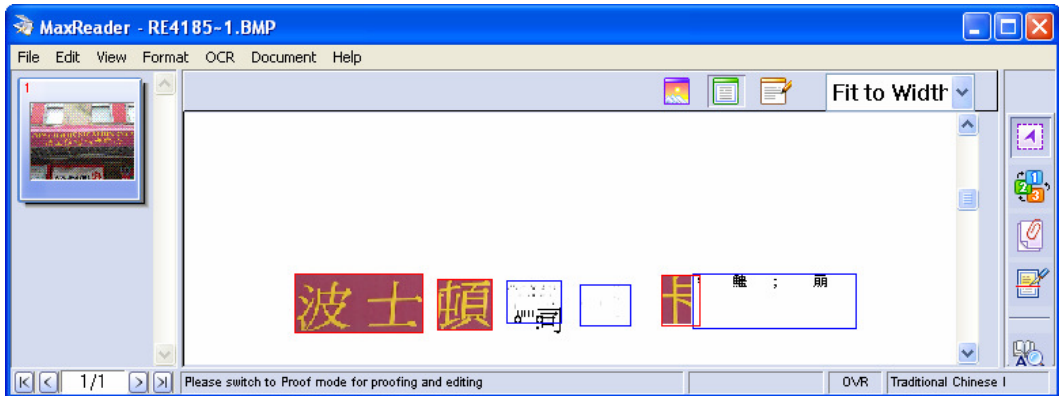


Figure 8.23 Incorrect OCR results—Text recognized as multiple text and image blocks

I started GIMP image editor and opened the picture file. I clicked the **Select rectangular regions** button located at the top left corner of the main window. I went to the **Image Window** and enclosed only the area containing the text. I pressed **<Ctrl> C** to copy the region to Windows Clipboard, and then clicked **Paste as New** from the **Edit** menu on the **Image Window**. By doing that, I got a clean image with only the text I wished to read (Figure 8.24).



Figure 8.24 A clean image containing only the text to read

On the **Image Window**, I clicked **Layer**, **Colors**, and then **Threshold** to open the **Threshold** tool. I dragged the scroll bar in there until the picture showed a very nice image of white text on a black background (Figure 8.25).
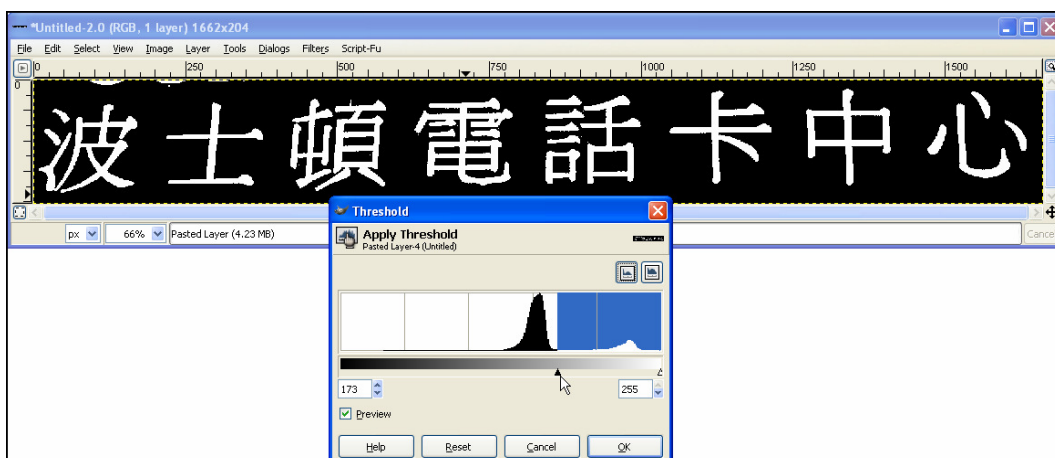
Figure 8.25 Use the **Threshold** Tool to convert a color image into B&W

At this time I suddenly realized why the recognition hadn't worked earlier. It was because the text was inverted (white on black), and MaxReader can not handle this. I clicked the **Layer**, **Colors**, and then **Invert** to change the text into black on white and saved the image file (Figure 8.26).
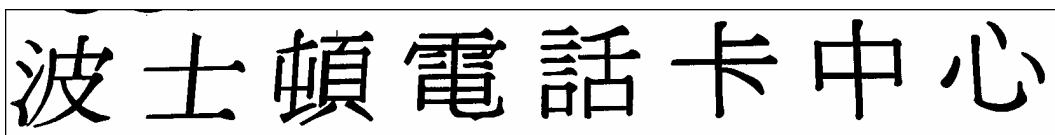

Figure 8.26 Inverted image after using the Invert Tool

I opened the new image file from MaxReader and did the recognition again. The result showed one Text (blue) block containing eight characters, which matched with what I had seen in the source (Figure 8.27). I clicked the **Verify Text Tool** button and saw no suspicious character there, which was perfect. I clicked the **Proof Mode** button and clicked **<Ctrl> C** to copy the text to Windows Clipboard.
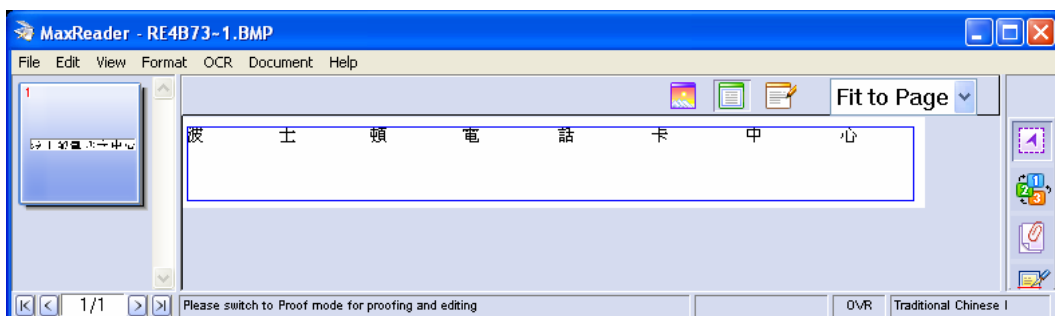

Figure 8.27 OCR result of Camera Example 1—Successful recognition showing eight characters in one text block

I started Lingoes and clicked the **Translation** icon to bring up the Translation portal. I selected SYSTRAN as the translator and selected Chinese and English as the source and target languages respectively. I pressed **<Ctrl> V** to paste the text from the Clipboard into the text box and clicked the **Translate** button to have it translated.

The Chinese text: 波士頓電話卡中心

The translated result from SYSTRAN: Boston calling card center

The translated result made perfect sense.

Reviewing my mistake in this example, I had failed to notice that the text was in reverse (light on dark) color until a very late stage. If I'd known this earlier, I could have used the **Invert Image** tool (selectable from the **Edit** menu) from the MaxReader program and saved me all the trouble of using the image editor.

## 8.3.2 Camera Example 2 (Sign Board)

The next example is a picture of a small sign in front of a building (Figure 8.28).



Figure 8.28 Camera Example 2 (Sign Board)