

PdFAQ #005

## Scanning Music – Easier Than You Think!

*Note: All prices subject to change. We will beat almost any price, plus we provide free technical support!*

### ***What Does It Do?***

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Just as you can scan and edit text, it is now possible to scan and edit music!

This is accomplished by using a specialized program that recognizes the notes and converts them into music. As with humans, the software does make mistakes, although the accuracy is between 90-95% for most of the programs available. Once the music has been recognized, it is either saved as a MIDI file for use in another notation program, or imported directly into a host notation program. MIDI files only contain note information, so things like dynamics, lyrics and other markings don't get transferred when you save as a MIDI file.

To avoid losing this valuable information, some scanning programs are integrated with a notation program. This allows you to immediately transfer your scanned music into a program for further editing without losing any information.

### ***What Can It Do For Me?***

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#### **Music Educators:**

- ? Problems with your instrumentation? Transpose the bassoon part for the tenor sax quickly and easily!
- ? Missing parts for your ensemble? Simply scan in the score and extract the part you need!
- ? Need an easier key? Scan and transpose!
- ? Wish you could afford a full-time accompanist? Scan your music in and save as MIDI file – you can then play the music at any tempo, in any key while stopping and starting wherever you like. You can even mute or solo parts for teaching!

#### **Arrangers:**

- ? Stop wasting time re-entering music! Just scan the music in and start arranging right away!

#### **Church musicians:**

- ? Too high or too low? Scan and transpose – then print out the new parts for your choir.

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- ? Need a hymn for Alto Sax, Clarinet, Tuba and Piccolo (or anything else for that matter!) – by tomorrow? Scan, arrange and transpose - in just a few minutes you'll have the parts that you need!
- ? Can't find an accompanist all of the time? Scan your music in and save as MIDI file – you can then play the music at any tempo, in any key while stopping and starting wherever you like. You can even mute or solo parts for teaching!

### Home users:

- ? Trouble learning new music? Scan it in a listen to the computer play it for you. Slow it down and then speed it up as you watch the notes go by or as you play along!

### Instrumentalists & Vocalists

- ? Music out of your range? Scan and transpose – in just a few minutes you can have music in *your* range!
- ? Wrong key? Want to play a string quartet in your brass quintet? Transposing becomes as easy as scanning the music in, choosing the key and printing out the parts that you need!

### What Do I Need?

None of the programs below require expensive scanners. Almost any flatbed scanner will work - just remember to scan in greyscale and follow the instructions with the software! If you don't have a scanner, you can purchase them for less than \$100.

I have not included Print Music or Allegro in the list of software below. Although both programs offer scanning capabilities, my experience with them so far has been that they are less than adequate in this area. Aside from poor accuracy, the music does not retain it's original layout, nor is there an on-screen representation of the original to compare against. This makes it *extremely* difficult to find errors and correct. (Believe me, this can be very frustrating!) These programs do not allow you to scan directly into the program. Instead you need to import a file you have already scanned. For more information on these three programs, please contact us or visit our website.

MidiScan has been removed from this FAQ, as it has been replaced by SmartScore.

Information on scanning with [Finale 2003](#) has been listed at the end of this FAQ.

### Photoscore Lite (Hybrid - both Mac and PC)

Free with Sibelius – <http://kellysmusicandcomputers.com/sibelius.asp>

PhotoScore is a free plug-in that comes with Sibelius. Sibelius is a smart, powerful, and fast score-writer that is also very easy to use. Photoscore integrates very nicely

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with Sibelius. After you scan the music in, you have the option of editing any mistakes that the program may have made in scanning, but it is surprisingly accurate! Once you have fixed any problems, the click of a button will transfer the music into Sibelius for further editing.

One of the outstanding features of Photoscore is that it will automatically detect if it missed any notes by adding up each measure. If there are missing notes, it will actually display a small red note to the right of the bar, indicating the value of the missing note(s). For example, if a quarter note is missing from the bar, a small red quarter note will indicate this for you. This is a real time saver, since correcting rhythmic errors is the hard part. Correcting pitch errors is simple - just play the file back and listen for mistakes!

Another great feature in Photoscore is the interface - it is virtually identical to Sibelius, making it very easy to use.

Photoscore is quite fast and the fact that you can edit your music in Sibelius makes arranging and transposing really easy! Although the "Light" version that comes with Sibelius only scan notes, the full version of PhotoScore scans text, dynamics, articulations, etc. Note that Photoscore Lite will not scan music with multiple voices (i.e. Soprano and Alto on the same staff.)

### **Photoscore Full Version (Hybrid - both Mac and PC)**

*Add-on to Sibelius* - <http://kellysmusicandcomputers.com/savemoney.asp?c=1584>

This is an upgrade to the PhotoScore Lite that comes free with Sibelius (see above for information on PhotoScore Lite.)

The full version is faster, more accurate and has more features, including the ability to read:

- ? Notes & chords (including stem direction, beams & flags), rests
- ? Accidentals, articulation marks
- ? Clefs, key signatures, time signatures
- ? 5-line staves (normal and small), barlines
- ? Page format, including the page size, staff size, margins, and where systems end
- ? Slurs, ties and hairpins
- ? Text including lyrics, dynamics, instrument names, tempo and technique markings

Photoscore does a very good job of picking up multiple voices and articulations. Text scanning has been dramatically improved in version 2.0. Other new features include the ability to recognize fingering and chord symbols and the addition of advanced

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tuplet deduction. Photoscore 2 will even try to distinguish between bold and italic text.

Overall, I found the full version to be more accurate in recognizing notes than the lite version. The results ranged from unbelievably good to surprisingly poor, depending on the score. Some brass quintets I scanned were perfect – every note, rhythm and articulation was identified. The original score was clean and well spaced. I was equally surprised with some solo trumpet literature from a Franco Colombo publication in 1953. The music was very crowded and the note heads were quite thick – not pleasant to read at all. However, PhotoScore did a fine job reading it and only made two or three errors on the entire page, apart from the text errors.

PhotoScore also surprised me with its ability to pick up complex meters, frequent time changes and an abundance of articulations. However, it occasionally lapsed and missed the first two or three bars of the last system on the page. Rescanning sometimes helped, although in most cases rereading the music was more useful.

There were a couple of scores that were horribly inaccurate, with many missing notes and missing accidentals. These were generally scores with small staves, so scanning the music at 120% may have helped.

The new version of PhotoScore seems to be more consistent. In previous versions, it was difficult to predict which scores would work and which ones wouldn't. I still have a difficult time predicting what music will work well and what won't, but you can be sure that hand-written scores or jazz fonts won't turn out very well.

All in all, PhotoScore does a fine job of scanning music. You can't depend on it to work for every score, however, and there will still be cases where you are better off entering the music yourself with the keyboard!

## **SmartScore (Hybrid - both Mac and PC)**

SmartScore Professional - <http://kellysmusic.biz/savemoney.asp?c=1714>

SmartScore SongBook - <http://kellysmusic.biz/savemoney.asp?c=4049>

SmartScore Piano - <http://kellysmusic.biz/savemoney.asp?c=1715>

SmartScore Guitar - <http://kellysmusic.biz/savemoney.asp?c=4050>

SmartScore MIDI - <http://kellysmusic.biz/savemoney.asp?c=4051>

SmartScore 2.0 offers a dramatic improvement in scanning over earlier versions. It also offers a host of new features, along with a number of new "editions." Each SmartScore Edition uses the same scanning engine, but vary in the number of staves that can be scanned and the type of editing that can be done. (See chart below).

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New features in SmartScore 2.0 include supports for text and lyrics. Although it can't scan guitar fret boards, you can add them along with chord symbols from a library of over 100 chords. There are also a number of new MIDI editing tools and features.

All versions can save the music you scan as a MIDI file, to be imported into any sequencing or notation program. Doing this, however, means that you lose any non-note information such as dynamic markings or articulations. It also means that your notation program must "interpret" the MIDI data and display it as notation. This means that what may have been a staccato quarter note when you scanned it might become a dotted eighth sixteenth rest combination.

Apart from the MIDI Edition, all SmartScore editions allow you to import your file into Finale. Most of your articulations, dynamics, etc. are retained for editing in Finale. I found this much easier than editing the file in SmartMusic.

One of the unique features of SmartScore is the way that it separates the way the music sounds from the way it looks. In effect, Smartscore becomes both a notation program and a MIDI sequencer. The MIDI capabilities of the Pro and Songbook Edition are quite extensive. For example, to change velocity and tempo, you can use your mouse draw a graph above the staff indicating the shape of the dynamics, or change in tempo.

Smartscore also allows you to assign individual voices to different MIDI channels, making it a great tool for practicing choral music. You can mute individual voices, or assign different instruments, making "music minus one" fast and easy.

Although not as easy to use as other notation programs such as Sibelius, Smartscore features an extensive list of notation editing features in addition to the MIDI editing. Print preview seems to be missing, and you can end up putting too many beats in a bar if you aren't careful.

With improvements in accuracy and new features such as text and lyric scanning, SmartScore Version 2.0 has made scanning music a suitable option for anyone who needs to edit, arrange or simply playback music. Although we wouldn't apply the words "easy to use", the manual and tutorial are well written. Hopefully future versions will address usability concerns. It also still has problems with "missing" barlines, requiring you to manually add in the ones that are missing, but other than these minor concerns, it is a very good program.

See chart below to compare the various editions of SmartScore and determine which is right for your needs.

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	<a href="#">Smartscore Pro</a>	<a href="#">Songbook Edition</a>	<a href="#">Piano Edition</a>	<a href="#">Guitar Edition</a>	<a href="#">MIDI Edition</a>
<b>ENF Editing</b>	Yes	Yes	Yes	Yes	Yes
<b>Number of Staves Recognized</b>	32 Staves max.	3 Staves max.	2 Staves max.	1 Staff max.	4 Staves max.
<b>Text &amp; Lyric Recognition / Editing</b>	Yes	Yes	No	No	No
<b>Score Structure</b>	32 Parts	Limit to 3 Parts	No	No	No
<b>Bracketing</b>	Yes	Yes	Yes	No	No
<b>Guitar and Chord Symbols</b>	Yes	Yes	No	Yes	No
<b>MIDI Editing / Step Rec. / Virtual Drums</b>	Yes	Yes	No	No	Yes
<b>MIDI Recording</b>	Yes	Yes	No	No	Yes
<b>Hidden Symbols</b>	Yes	Yes	Yes	No	No
<b>MIDI to ENF</b>	32 Parts	3 Parts max.	2 Parts max.	1 Part max.	No
<b>Instrument Templates / Master System</b>	Yes	Yes	Yes	No	No
<b>ENF Printing</b>	Yes	Yes	Yes	Yes	No
<b>ENF Transposition</b>	Yes	Yes	Yes	Yes	No
<b>File Export</b>	ENF / NIFF MIDI / FIN	ENF / NIFF MIDI / FIN	ENF / NIFF MIDI / FIN	ENF / NIFF MIDI / FIN	ENF / MIDI

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## Smartscore Lite - (Hybrid - both Mac and PC)

Free with Finale – <http://kellysmusicandcomputers.com/savemoney.asp?c=1249>

Finale 2003 includes SmartScore Lite. The Lite edition seems to have the same high level of accuracy that is included with Smartscore Pro, but its usability is limited in a number of ways. For example, you need to scan the music yourself, saving it as an image file before using Smartscore. This means you will need to set the appropriate resolution and correct any page skew or other problems before running it through Smartscore.

More significant usability issues include the inability to show both the original and the notes in Finale on the same screen for editing purposes. It is much easier to spot and correct mistakes when you can look at both on the same screen. The fact that Smartscore Lite seems to retain the same number of bars per system means that you can overcome this drawback by keeping the original in hand.

Another major disappointment in the lite version is the lack of any sort of error correction. Neither Smartscore Lite or Finale will let you know when there are obvious rhythmic mistakes. Photoscore handles this by immediately indicating any incomplete measures, and the full version of Smartscore includes an error checking mode. In fact, with Smartscore Lite some music we scanned was missing entire measures, and we hear no warning or complain from Finale! Although it has an option to recognize triplets, most music we scanned with triplets ended up having extra beats in those bars - again with no warning from Finale or Smatscore.

Other features missing in the "Lite" version include:

- ? does not recognize lyrics and text
- ? does not pick up any dynamics and articulations
- ? does not include a scanning interface
- ? no error correction, editing or preview before sending to Finale

However, Smartscore Lite is still quite accurate, and given that it is included free with Finale 2003, it will be beneficial to anyone who doesn't need to scan music very often. If you frequently scan, or don't want the hassle of guessing where mistakes might be and then adding all of the missing articulations, dynamics and lyrics, you might want to get one of the full versions of Smartscore to use with Finale. If you don't think you will be scanning a lot of music, and would welcome any relief from tedious mouse or step entry, then Smartscore Lite is surprisingly accurate and the price is right!

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## MP Scan (PC Only)

Demo <http://KellysMusicAndComputers.com/savemoney.asp?c=1481>

Scan music into Music Publisher 32 (requires Music Publisher 32 to work). Music Publisher 32 is a "graphical" music editing program, which only concerns itself with how your music looks, rather than how the music will sound. This makes it very easy for the MPScan to re-create your original score in the Music Publisher 32 program for further editing. Note that Music Publisher does not contain any MIDI features such as playback or recording. It doesn't bother with enforcing any musical rules, so you can create scores exactly how you want them to look!

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