Letter to the Editor ("Aprint") . . .

Comments regarding *APrint*

In summary: ***APrint*** (***APrint—A Simple Book MIDI Software*** by Patrice Freydiere**,** *Carousel Organ*, #38) needs work to be user friendly and it attempts to be all encompassing when it should be limited and simplified to the function of printing book and roll tracings leaving the other function of automatic translation to available mature and more sophisticated manually operated MIDI editor programs.

Downloading *APrint* is straight forward. It runs in the Java environment which is commendable this day and age with high speed computers with copious memory. The APrint installation process calls for Java updates necessary to run APrint.

The first function, identified by "Translator," attempted by *APrint* is an automatic translation of a MIDI file to the scale of an organ which is accomplished by translation templates unique to each organ scale imbedded in the *APrint* program. My experience is that transcribing a MIDI arrangement to an organ scale is a challenging intuitive process dependent not only on the scale and registration of the organ but also on each individual MIDI arrangement itself. The smaller the organ scale the more difficult is the translation. Given today's technology; well into the future, the very complicated automatic translation function will not be totally satisfactory or supportable as software. A user of *APrint* will, by necessity, need to manually preprocess the MIDI arrangements on a MIDI editor to circumvent the shortcomings of the translation. My suggestion is that the *APrint* translation function be replaced by a single standard input MIDI file note/key and Channel assignment format that a separate MIDI editor program can work to. If an accomplished software programmer wants to attempt an automatic translation algorithm, for a specific scale, it can be compiled as a stand-alone program that outputs a MIDI file to a standard *APrint* MIDI input format. Personally I enjoy the challenge of transcribing a MIDI file to a restrictive organ scale using a MIDI editor. MIDI editors are not easy to use and it takes a lot of practice and skill to learn how to effectively use them. Once COAA members know how, they are in for a lot fun transcribing arrangements to play on their organs. For those organs without a MIDI interface, programs such as *APrint* are a necessary route for playing their creations.

The second function, identified by "Keys," accomplished by *APrint,* would be the mapping of a MIDI file to the scale of an organ including key location, spacing, book/roll width, and tempo speed. Again, this is accomplished by templates unique to each organ scale imbedded in the *APrint* program. Six templates were included in *APrint*: Non-translated MIDI, 20-note Raffin, 52-key Limonaire, 27-note Erman, 24-note Thibouville, and 43-note Jipe. The 20-note key Raffin template (the one that would have the most interest of COAA members) crashed the program. The "Keys" function can be relatively straightforward and I suggest that an input function be provided so that the user can input and save the specific scale of an organ as a data file without having to reprogram *APrint* to include an imbedded template.

The third function of *APrint* is a piano roll display of the MIDI file to the selected "Key" organ template. The display is nice enough; however, in its current form it has a limited utility to the user. I suggest the following additions and changes be considered: The "NoteDef" in the pop-up box should indicate note pitch or key function rather than MIDI number. The key number "Piste" also in the pop-up box should be retained. A measure grid and measure number should be included for Note/Key location. The location of notes/keys in the MIDI file not included in the scale be should indicated. Overlapping and abutted notes (acceptable for computer sound generation) should be indicated. Notes, register keys and percussion keys could be displayed in different colors. A limited editing and file save capability could also be included to change individual note/key position and length.

The fourth function, identified by "Play" is a mono-tone computer generated emulation of the expected organ sound of the organ playing the arrangement with a cursor indicating the play position on the display. This function is straight forward providing a limited utility as a final confidence check of the arrangement. The play function would be essential if an editing capability were to be included. I suggest the following additions and changes by considered: The default voice should be an organ voice rather than a piano voice. The "Play" should start at the start of the display position rather than at the start of the arrangement.

The fifth function, identified by "Print," providing a print out of a book or roll tracing for punching is the principle purpose of APrint. I would think that this capability would be of significant interest to COAA members having book and small roll operated organs. Assuming that the print out is accurate it is nicely done. I printed out a one-minute long, *Happy Birthday* arrangement for the 24-note Thibouville organ. The printer setup window indicated that there were 9999 pages to be printed which was disconcerting. The print result was 19 landscape pages that would require careful taping together. Repeated passages in an arrangement could be edited out prior to printing to reduce the number of pages required as a tracing. My one recommendation is that the print out should include reference lines establishing the location of book or roll edges to assure proper alignment.

Observations:

APrint is offered as open source, meaning that source code is available for any programmer to change or add to the software to suit individual needs. A

cursory review of the downloaded *APrint* source code indicates that even though it is properly structured, it is minimally commented. Commenting is a detailed explanation as to the purpose of each program statement and/or group of statements that inform a programmer as to what is going on within the program. Commenting is an absolute necessity if the software is to be supportable; i.e., fixing errors, making changes, and adding functions over time. Commenting is the Achilles Heel of software development. Established standards for commenting are easily and frequently ignored. Without comments it is almost impossible for an unfamiliar programmer to understand the program. Without comments it is very difficult even for the original writer of the program to retrace the statements a year after they were written.

Java is a veritable smorgasbord of software functions. More functions are being added all of the time. There is a considerable amount of temptation on the part of a programmer to incorporate bells and whistles into the program that is not directly germane to the principle purpose of the software. The extra bells and whistles unnecessarily add to the complexity of the program and reduce its reliability and supportability.

The website description of *APrint* goes into some detail of incorporating a capability of automatic operation of punches. The number users for this capability would be severely limited and the program would probably be customized to each punch machine. This program should be kept separate from *APrint*. (Maybe it could be called "APunch") When it comes down to it, the construction of a reliable automatic punch machine will be much more difficult than constructing the software to operate it.

In my lifetime I have seen the evolution of software development from the time of machine code programming, Hollerith punch card FORTRAN, Assembly Language, Compilers, UNIX, "C," and now Java. Someday this will be eclipsed by something more sophisticated and complex. (Pun intended in that Eclipse is a huge free and open source program environment used extensively for writing, editing, and debugging Java software.) I am not an accomplished programmer (dabbled at best) however, as a System Engineer for the Air Force, I was responsible for specifying, overseeing development, and use of software costing many millions of dollars. This experience may have made me a little cynical about software development and programmers. This review is intended to be constructive and informative and I hope it is taken in that light.

Mike Barnhart

A Response to Mike Barnhart's Letter to the Editor . . .

Mike Barnhart has an accurate and valuable point of view. I hope I could exchange some further ideas with him. Since the article was originally written there has been a lof work done to the program. Some of the improvements include: several 'bug' fixes, a new gamma print functionality, print review; a script engine for translating from MIDI to barrel organ, and the addition of new instruments.. The newest viersion of APrint can be viewed and downloaded at http://pfreydiere.free.fr/aprint/aprint-en.html.

Patrice Freydiere

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