

TunePal: A Portable Music Storage and Retrieval Tool for Musicians

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ABSTRACT

This poster presents TunePal, a tool that can be used by musicians for the storage and retrieval of melodies. TunePal is specifically designed to be used by musicians playing Irish traditional music as it supports the ABC format for musical notation. Irish traditional music is often played in informal settings known as *sessions*, where access to a PC is not practical. TunePal therefore runs on any Pocket PC 2002 or greater platform or any Psion Series 5/5MX/Revo machine.

Keywords

TunePal, Irish traditional music, portable computing, ABC notation, music archiving.

INTRODUCTION

Irish traditional musicians typically know several hundred tunes. Many musicians may play a thousand or more tunes over the course of a lifetime of playing [1]. Musicians typically gather in informal settings known as *sessions* to play together [2, 8]. Sessions take place in shared spaces such as a pub or open house. Often sessions are anchored by several core musicians who may be paid to play, though sessions are usually open in the sense that any musician of appropriate standard can join in [1, 2, 8]. It is not uncommon for participants at sessions to have never played together prior to meeting at a session. This is particularly true of sessions that take place at music festivals. This can lead to interesting challenges as musicians try to find a repertoire in common.

Current estimates suggest there are at least 7000 traditional tunes in existence [1]. There have been several attempts to catalogue the cannon of Irish traditional music [3, 4, 5]. In recent years, the ABC format has emerged as a language for the storage and transmission of tunes electronically.

TunePal is a program that runs on a portable device that can store and play tunes in the ABC format. It supports several unique features that make a useful tool for traditional musicians to use at sessions, such as the ability to quickly locate a tune among thousands stored on the device, the ability to play a section of a tune and the ability to speed up or slow down a tune.

THE ABC FILE FORMAT

The ABC format was introduced by Chris Walshaw in 1991 [6]. The format was designed primarily for folk and traditional tunes of Western European origin which can be written on one stave in standard classical notation [6]. ABC files are ASCII text files and so can be edited by any text editor, without the necessity for special software. Files are highly human readable, in the sense that a musician who understands the rudiments of musical notation should be able to decode a tune in the format. Each file can contain multiple tunes. File sizes are typically measured in kilobytes and this facilitates easy transmission by electronic means.

Figure 1. is the tune "Contentment is Wealth" in the ABC format. Each tune consists of a header section and a tune body. The header section contains amongst other fields, the title, composer, source, tempo, key signature, geographical origin and transcriber [7]. As tunes can have several titles, the title field can be repeated for a given tune [1].

```
X:11
T:Contentment is Wealth
R:jig
M:6/8
K:Edor
GFG Eed|BAB EFG|FAF DdB|AFD D2f|gfe
edB|BAB ~d3|BdB DFA|GED E3:|
|:ede Beg|bge gfe|dcd Adf|afd
fed|ede Beg|bge gfe|BdB DFA|GED E3:|
```

Figure 1: The tune "Contentment is Wealth" in the ABC format.

The tune body contains the notation for the tune. The body encoding supports such features as ornaments, bar divisions, sharps, flats, naturals, repeated sections, key changes, guitar chords, lyrics and variations.

There is an active and vibrant community supporting the ABC format and a diverse range of tools have been developed for a variety of platforms and purposes. Additionally, comprehensive archives of tunes exist in the format, including a transcription of O'Neill's "Dance Music of Ireland" [3]. This

collection alone contains over 1000 tunes. TunePal was tested on a popular collection of approximately 2000 tunes created by Henrik Norebek [9]. This collection includes many tunes commonly played in sessions.

Prior to the development of TunePal, there was no tool for playing ABC files on Pocket PC. Figure 2 depicts musicians using TunePal at a session.



Figure 2: Musicians compare tunes using TunePal

FEATURES OF TUNEPAL

Figure 3 presents screenshots of TunePal. The leftmost screen is the program's main screen. The currently open file is displayed along with the list of tunes contained in the file. Title, alternative title, type, key and composer are displayed in sortable columns. Tapping a tune displays the rightmost screen.

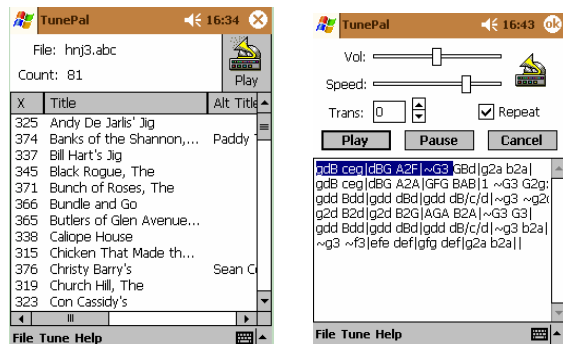


Figure 3: Screen shots of TunePal on Pocket PC

This screen displays the ABC notation of the tune and allows the tune to be played back. Playback of tunes is the most essential feature of the program as most traditional musicians learn tunes by ear and not from notes [2]. Initially, the entire tune will be selected and hence played back, though it is possible for a user to select a sub-section of a tune for playback. This may be required when learning a difficult phrase for example. Additionally, the tune may be speeded up or slowed down, or transposed up or down a semitone at a time. Searching for a specific tune is also facilitated. A user can enter search criteria and the program will display all matching tunes across all files stored on the machine. Searches can be by phrase, title or indeed any part of the ABC notation of

the tune. Searches of thousands of tunes are typically completed in seconds.

The program was made available for free download [10] in early June and initial feedback has been very positive.

FUTURE WORK

TunePal has enormous scope for improvement. Some possible areas for future work include:

- Improved support for the ABC format
- MIDI support for better quality sound output. This would require the development of a software synthesiser for the Pocket PC platform.
- ABC output as stave notation, to facilitate musicians who prefer this format.
- Searching by playing. Many tunes have several names, while others have none at all. A useful feature would be the ability to play a phrase from a tune and have the program match it.
- The ability to wirelessly share tunes.
- Automatic tune transcription to the ABC format.
- Porting the program to the J2ME platform so that the program could be run on a Java enabled mobile phone. This would greatly increase the user base and situations where ABC tunes could be accessed.
- Impact on music learning. In the past, the transmission of tunes was largely oral. The advent of the internet and the ABC format has already had an impact on this transmission. Access to archives of thousands of tunes on a portable device which can be used in sessions can facilitate new ways of learning and interaction. This area remains to be investigated.

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