



**STEINBERG**

**tns**

TNS (c) Steinberg Research

16 Track Note System + Editor

The TNS software takes the music you recorded on your pro 16 sequencer and transcribes it to the screen with auto-correction. The program supports a music editor, that allows you to set, append, insert, or delete notes at any place, even the notation of polyphonic passages in a single staff.

The TNS is an integrated software, only works in combination with the pro 16.

You can switch between those two programs and listen promptly to the result of what you just edited. You can see what you just recorded in the pro 16 without any disk-operation within about 2 seconds.

#### HOW TO GET INTO THE TNS

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Before you switch into the TNS there has to be at least one track recorded on the pro 16. Press >SHIFT TK to get to the CONFIGURATION PAGE of the TNS.

If the pro 16 returns immediately after you pressed the >SHIFT TK there is not enough memory-capacity to switch into the TNS.

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57 Blocks free in MEM is the minimum to get into the TNS  
-----

To get some free space you might erase single tracks or complete sequences. Press >SHIFT TK again to get into the TNS.

The first page on the screen after switching to TNS is the "Configuration Page".

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The TNS starts only if at least one track has been recorded so far on the pro 16.

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The following little graphic shows you the way how to use the 3 pages of the TNS and Pro 16 and the two keys to step through these pages.

Lets start from the pro 16:

Press "SHIFT T" to get into: -----  
!Configuration Page!  
-----

Press "E" to get into: -----  
! Notation-display !  
-----

Press "E" to get into: -----  
! Editor - Mode !  
-----

Press "E" to get out of: -----

```
Press "Space-bar" to get back to: -----
!Configuration Page!
```

```
Press "Space-bar" to get back to:  -----
                                     1      PRO 16      1
```

The TNS displays the actual sequence of the pro 16. If there is no recorded track the program stays in the pro 16 if you press >SHIFT T<.

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CONFIGURATION PAGE
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First page of the TNS is the configuration page.  
If you are in the pro 16 press >SHIFT TK to oet into the confiouration page.

Move the cursor with the standard cursor keys. Increase or decrease parameters the same way you do it in the pro 16 by using F 1 or F 3.

Under the word COMMON on the left side you find the parameters responsible for the complete TNS functions.

BAR                      Select the bar you want to be displayed on the screen.

TMSN Time signature numerator

TMSD Time signature denominator

COMB                      Combination of two of 3 systems: OFF, 1/2, 1/3.

```

DOTS      Staff-lines dotted :ON
          "      " undotted :OFF

```

The following parameters are used for printers or plotters.

```

DEVC          Device adress for printer or plotter ( Default 4 )

```

SEC Secondary adress (Default 0. Some interfaces needs different adresses. Check the manual)

**TYPE** Hardcopy mode. Two modes are possible: 0 for Commodore-printer  
1 for Epson-printer.

PRT/PLT      The INS has two modes for printing. You can do a hardcopy of the screen  
or use the MACRO-function to print the complete sequence.  
In the MACRO-function you may select between PRT = Printer (1) ; or PLT = Plotter (2).

Another possibility to connect your printer is using a 10 pin strip-cable connected between User-port and Centronics interface. In this case the device number must be set to 2. Check out the secondary address for Line-Feed.

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Another possibility to connect your printer is using a 10 pin strip-cable connected between User-port and Centronics interface. In this case the device number must be set to 2. Check out the secondary address for Line-Feed.

## TRACKTABLE

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Lets move to the right side of the configuration page next to the COMMON field:

TRK TRACK Tracks recorded with the pro 16.

QUANT

QUANTIZE

REL RELEASE To lengthen a note

EG	LEGATO	Overlapping of notes
----	--------	----------------------

STACCATO Gives very short notes the adjusted value

KEY KEY

PL SPLITPOINT LOW

PH SPLITPOINT HIGH

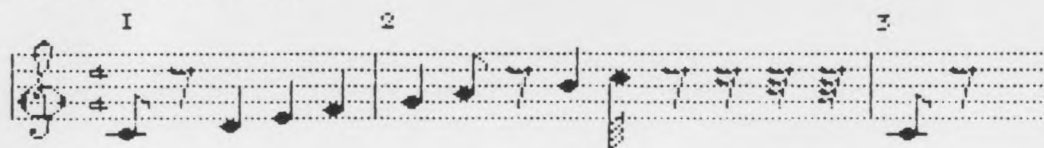
The upper three tracks are coloured separately. On the screen you will see only these three tracks. The program handles the 16 tracks of the pro 16 and if you set some splitpoints, the maximum number of tracks can be up to 24.

to get used to each separate function of the configuration page for example lets take a C major scale, recorded with quantize set to 16 with the pro 16 on track 1.  
press the space-bar to get back to the pro 16 and record the C-major scale.  
after finishing the recording press "E" to get into the configuration page.

ove the cursor to TRK in the first field. Select with F 1 track 1.

only tracks with a recording on it can be selected in the TRK-column.

Set the following tracks under the first track to OFF with F 3.  
 Press again "E" to see the result of your recording. As only one track is selected,  
 this track is displayed in the middle of the screen.  
 It should look like this:

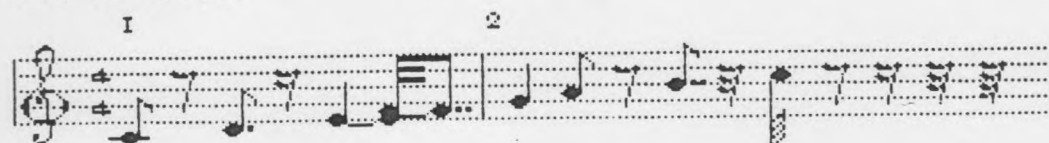


May be your scale looks a bit different but still you can stick to our example.

Jump back into the configuration page with the key "E" and set the values of REL and LEG to OFF.  
 Set QNT to 64 and STC as well to 64.

Now again press "E".

On the screen is the most realistic display of your C-major scale, realistic in the way the computer looks at it. It's exactly the recording of the pro 16 with the highest-resolution of the TNS = 64.  
 It may look like this:



The computer "looks" at the first note c as an eighth note with a rest because you lift your finger from the key after an eight time-value.

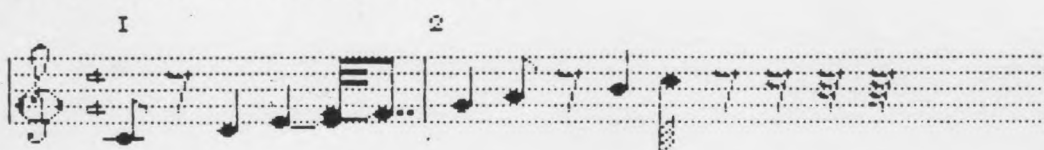
The step from e to f is the opposite of this case. The note e was still held while the f has been played. The e was still held a 32 length after the f has been struck.

In the first case we can use REL = Release to offset the rests. Release extends the value of the notes untill the next note is pressed. The maximum Release is to the end of a quarter.

Complicated?

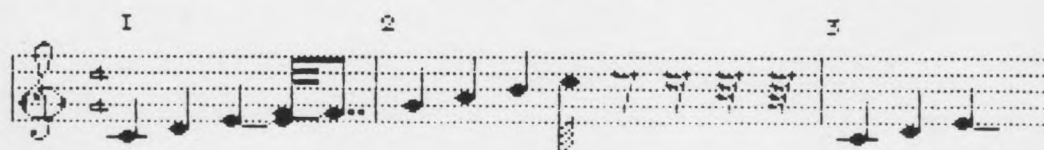
Our example will help us to understand.

We set RELEASE to 16 and look at the result:

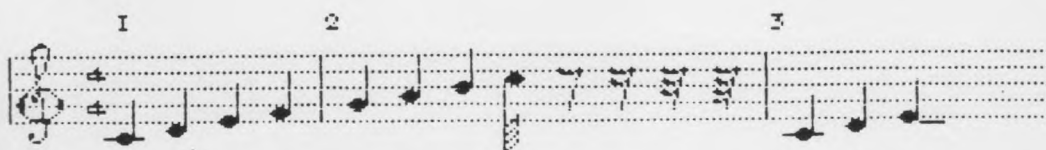


The Note d and b each become a quarter-note as a new note was striked within the release-time.

In order to change the first c and the a to quarter-notes, RELEASE must be set to 8:



The opposite of RELEASE is LEGATO. In our example you find the note e and f overlapping. Set LEGATO to 16 :



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LEGATO shortens the value of a note untill the next note is pressed.

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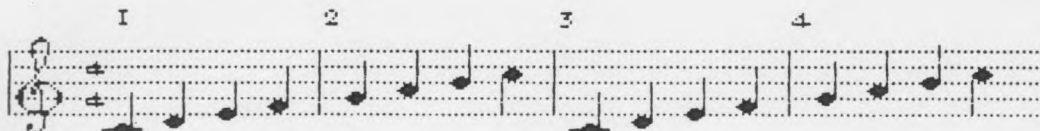
LEGATO is only active to the end of a quantum as well.  
 Now our example nearly looks the way we expected.  
 But what about the c in the second bar with the 64 time-value?  
 This note happens by quantizing with the pro 16. The length of the note is 0.  
 that means the note is extremely short and some synthesizers might not even  
 play this note c if the attack envelope is too slow.

=====

STACCATO assigns the value adjusted in "STC" to notes with a lenght of 0.

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In our example we set STC to 4 = quarter notes and the scale now looks  
 the way it should:



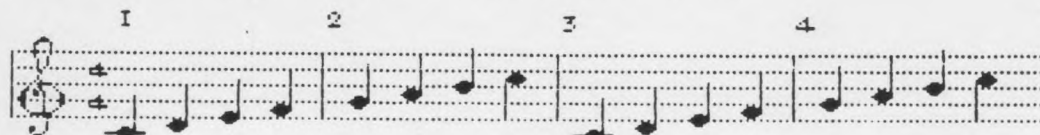
An easy way to get a good looking score-display is QUANTIZE.

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QUANTIZE is correcting all notes to the selected QNT value.

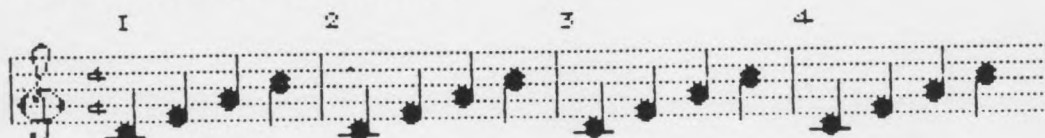
=====

In our example we may get the same result by setting the QNT to 4:



If the Quantize is set to 4, RELEASE, STACCATO and LEGATO might be set off, because  
 they are not longer responsible for the note-display.

Now lets keep the QUANTIZE as it is, QNT = 4, and double the speed of the scale in the  
 pro 16. Switch back to the note-display:



As the QUANTIZE is set to quarter notes, the second note is set onto the first.  
 Set QUANTIZE to eight notes and take a look at the result:



To make it simple, you should bring the quantize to the shortest value that you suspect.

If QNT is set to triplets the TNS tries to display triplets only if it is necessary.  
 Eight notes are still displayed as eight notes. Of course this is also depending on the  
 selected Quantize.

For what reason do we need the parameters RELEASE, LEGATO and STACCATO?  
 They can help you to get the picture of the notes as close as possible to look like you expected.



Up to now we talked about the parameters which influence the horizontal displaying of time-values.  
 Lets take a look at the vertical, that means the key of notes.

With KEY you select one of the 32 keys.

From C - c# Major

From C - cb Major

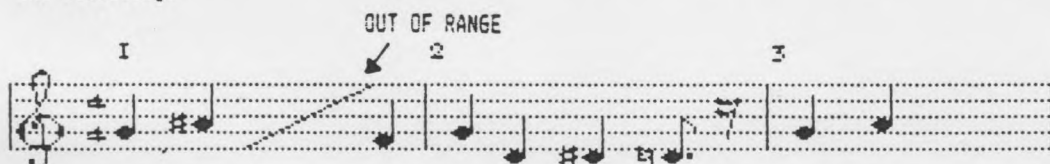
From a - a# Minor

From a - ab Minor

The TNS can handle up to 7 clefs. A special feature of the TNS is to set each track to a separate key.

You might already checked that TNS is able to display one track several times. That enables you to give the same track different keys which is for example useful for brass instruments.

The TNS can handle up to 3 1/2 octaves. If you play a typical piano passage using both hands, between bass and chords you got more than 3 1/2 octaves, the TNS might display things like the following:



A line crossing the complete staff system tells you, that the distance within the quantum (quarter, eighth...) is bigger than 3 1/2 octaves.

This is way you have the possibility to split each track into two or more tracks.  
 To set the split-point of the systems use SPL = Splitpoint Low and SPH = Splitpoint High.

The first system displays only the notes above the adjusted SPH and the second system displays only the notes under the adjusted SPL.

In our example, in TRK we select two times track 1. In the first track we set SPL to g2. In the second track we set SPH also to g2.  
 It looks like this:



Now try some different splitpoints and have some experiments with the system. Change Quantize, Release etc. and don't get too confused because of all the interrelations between those parameters.  
 Try a simple melody to get used to the TNS.

## SCORE-WRITER-PAGE

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Six functions are effective in the score-writer-page.

F 1      Moves 1 quantum forward  
F 3      Moves 1 quantum backwards  
F 5      Moves 1 bar forward  
F 7      Moves 1 bar backward  
P        Hardcopy of the screen for matrix printer  
SHIFT P   Plotter print-out

A "quantum" is as much as the Time Signature Denominator value.

Printer can only print the actual page of the screen.

Plotter can plot 1 1/2 page at a time.

## EDITOR

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Getting into the Edit-Mode is only possible within the score-writer-page. Press "E".  
On the screen appears a long beam, the x-y cursor. Move this cursor with standard cursor keys. Also with the cursor keys you move the little "elevator" up or down.

In the box down in the left corner you find the edit-value and the edit-mode.

6 modes are available:

UP        increase a note one half-step  
DOWN      decrease a note one half-step  
SET       sets the adjusted time-value to an existing note  
INS       insert a note with the adjusted time-value  
DEL       delete a note  
APP       appends the note with the adjusted time-value

-----  
Change the edit-mode with F 2    (SHIFT/F 1)  
Change the time value = half/quarter/eighth/ eighth triplet/sixteenth etc.  
with F 4    (SHIFT/F3)  
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Before you start working with the editor set the parameter values of REL,  
LEG, STC and QNT to the highest value e.g. "OFF", and set the splitpoints back if you  
changed them already....

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.....otherwise you might edit something but do not see it on the score-writer because  
one of the parameters does not allow it. For example: If quantize is set to 8 and  
you try to change a note from a quarter note into a sixteenth note you would



not see it on the screen, because the quantize is set to 8.

#UP  
===

Move the cursor to the note you want to increase. Set the little cursor exactly over the note and press RETURN.

A short noise indicates a mistake.

Possible mistakes:

1. cursor is not exactly adjusted.
2. if we have tied notes the cursor has to be on the first note.
3. all edit-functions except insert are only possible on existing notes.
4. out of memory

#DOWN  
====  
see UP.

#SET  
====

Select the time-value that you want to edit to an existing note with F 4.

Move the cursor to the note and press RETURN.

Possible mistakes:

1. cursor is not exactly adjusted.
2. if we have tied notes, the cursor has to be on the first.
3. the same note appears on the score-writer before the new note is released.
4. the new note appears on the score-writer before the same note is released.
5. out of memory

#INS  
====

Select the time-value of the note you want to insert with F 4.

Move the cursor to the place, where you want to insert a new note and press RETURN.

Possible mistakes:

1. same note is already existing.
2. cursor is not exactly adjusted.
3. the same note appears on the score-writer before the new note is released.
4. out of memory

A good way to insert a note is to have a kind of "grid" of sixteenth notes to set the cursor more exactly on the desired point. The following example gives you the idea of what we are talking. In this example we want to insert a quarter-note by using three different "time-grids" which are 16, 32 and 64.

#DEL  
====

Set the cursor over the note you want to delete and press RETURN.

Possible mistakes:

**I**

fms 6ba...

**I**

fms 6ba...

**I**

fms

1. cursor is not exactly adjusted.
2. if we have tied notes, only the first note can be deleted.
3. there is no note existing in the cursor.
4. out of memory

APP

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As not all dotted notes are selectable in the edit-value you can lengthen a note by the selected app-value. For example if you have a quarter note and you append an eight value you get a dotted quarter note.

Move the cursor to the note you want to append and select the append time-value.  
Press RETURN.

Possible mistakes:

1. cursor is not exactly adjusted.
2. if we have tied notes, the cursor has to be on the first note.
3. the same note appears on the score-writer before the new note is released.
4. the new note appears on the score-writer before the same note is released.
5. out of memory

A general statement for the editor is this:

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If you start editing one track stay with this track until you finished editing.  
It will make the editing process much faster than doing the editing in several tracks by jumping from one track to another!

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MACRO

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If you do a hardcopy of the screen the result is just a part of a complete sequence. Only a few bars and as maximum three tracks are possible.  
To get a print out of the complete sequence you might use the function "Macro". Macro is able to print out all tracks selected in the configuration page.  
You select between printer or plotter in the configuration page.  
Also select all tracks you want to print out. Move the cursor to TRK and set the cursor under track three. Press F 1 to select another track. Set the cursor under these track and again press F 1. Select all the tracks you want to be printed.

=====

Press M

=====

First print will be the three tracks on the screen. Next three tracks will follow immediately and so on. The program returns into the configuration page when the complete sequence is finished. Now you have to jump back into the pro 16 and select the next sequence to be printed and start to repeat the macro-function.  
The macro function in combination with a plotter is only useful if the plotter can handle endless paper.

## ROTATE

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Press R to rotate tracks automaticly in the configuration page.

The macro-function is using the rotate-function very extensively.  
Here is an example:

Your sequence is 4 bars long and consists of 9 recorded tracks.

You selected all 9 tracks in the tracktable of the configuration page (TRK).

Now you press "M" for macro.

The printer will start printing the first three tracks, but in consideration of all 9 tracks.

Lets say the first bar of the sequence is printed the macro returns into the configuration page and rotates the tracktable three times. Now track 4,5 and 6 will be printed out.

After finishing all 9 tracks the macro rotates the tracktable again and start to continue printing the second bar with track 1,2 and 3.

The macro will stop and return to the configuration page after finishing the complete sequence.

## PRINTER,PLOTTER and INTERFACES

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First of all, switch on all the devices in the right order.

Start with the printer, next is the disk station and the last one in this row should be the computer.

As long as you use the Commodore devices like the MPS 801,803 or the 1520 you might not run into serious trouble.

But as soon as you try to use a printer with Centronics-interface the story of compatebility starts.

For these printers you have to use a special Interface, to transmit the serial data into the paralel format.

Most of these Interfaces on the market are so called "intelligent". Now that means they don't let the data through the way they are send from the IEC.

To get at least a few possibilities to try out different adresses we implemented the device address and the secondary address. Take a look in your interface- or printer manual to get the right combination.

If you want to use a plotter, you need a special disk with the module on it.

Ask your local dealer to order this disk.

STEINBERG RESEARCH

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