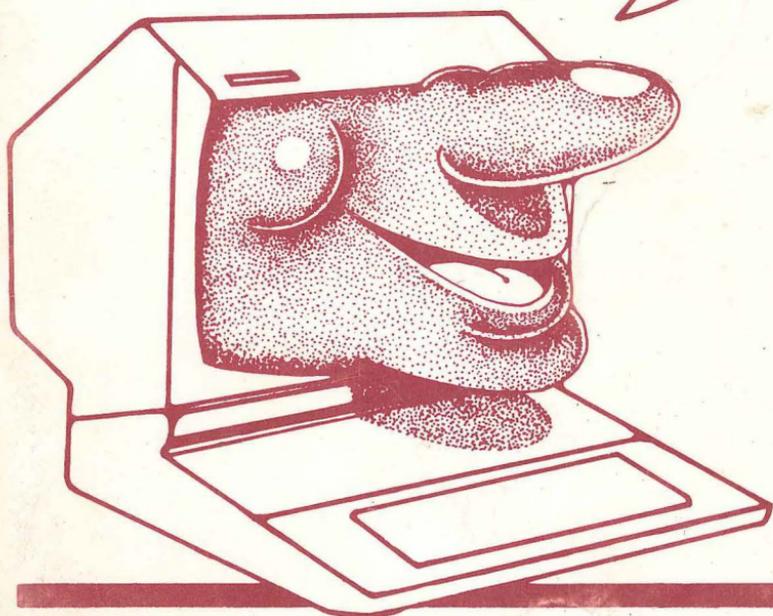# The Voice

™

MUSE SOFTWARE™

FOR APPLE II OR APPLE II PLUS (48K)
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THE VOICE™

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Published by

MUSE SOFTWARE, Inc.
347 N. Charles Street
Baltimore, MD 21201

For Apple II or Apple II Plus
Requires 48K
DOS 3.2 or 3.3

DO NOT UPDATE this disk with other versions of the disk operating system (DOS). If you do it will destroy this program disk.

REPLACEMENT - If this disk becomes worn or damaged, Muse Software will gladly replace it. Send the damaged disk with proof of purchase and $10.00 to:
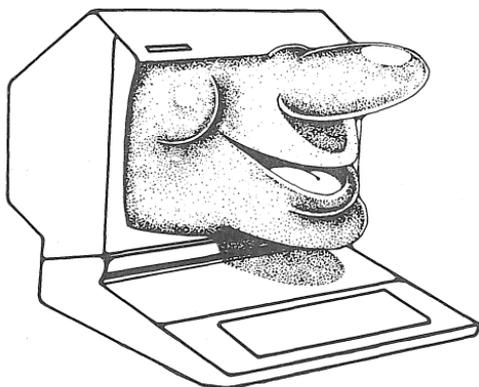
<div align="center">

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347 N. Charles Street
Baltimore, MD 21201

</div>

This documentation manual was prepared and printed using Super-Text - the professional word processor for the Apple, from Muse. Always ask for Muse Quality Software at your local computer store.

CONTENTS

INTRODUCTION

The Voice gives your Apple the power of speech!

The Voice speaks words which have been recorded and stored on vocabulary disks. Use the words in the Voice's pre-recorded vocabulary or easily record your own words to make your Apple say anything you like.

You can even add The Voice to your Basic programs. Use The Voice and discover a new dimension in Basic programming!

Load The Voice by typing PR#s (where s is the slot
number of your disk drive) and press RETURN. For
example, if your disk is in slot 6, type PR#6 and press
RETURN. After the program has successfully loaded, the
main menu will be displayed:
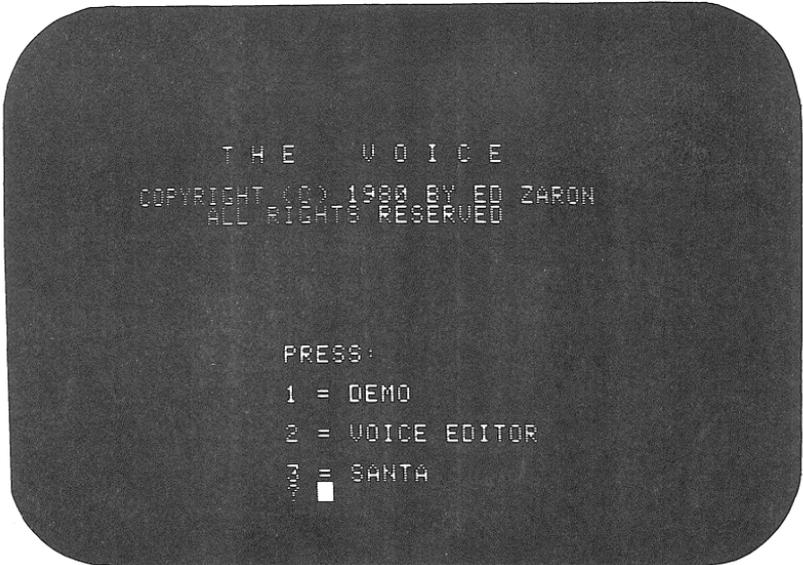
The Demo and Santa programs are assembly language
programs which combine color graphics with The Voice.

The Voice Editor program is used to record, edit
and playback your own words.

To select and execute a program type its number and
then press RETURN.

Return to the main menu from within any of the
programs by pressing ESC.

THE DEMONSTRATION PROGRAMS
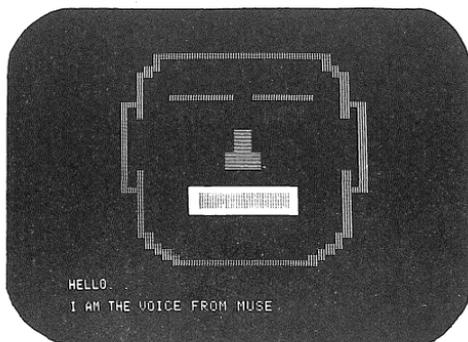
The Demo and Santa programs are demonstrations which repeat pre-recorded messages while displaying color graphics. Execute the DEMO program by selecting option 1 or the Santa program by selecting option 3 from the main menu.

As the program executes, the words will be displayed on the screen as they are spoken. While the program is running, press Q to quiet the voice, or press V to activate it again.

The demonstration will repeat until one of the following actions interrupt it:

Press C to interrupt the demonstration and display the vocabulary on the disk. Type in a phrase to be spoken using only the words in the vocabulary. Make sure there is a space separating the words. Then press RETURN and the program will speak your selected words. To return to the demonstration just press RETURN when prompted to 'ENTER PHRASE>'.

Pressing I will produce the same results as C, but the vocabulary will not be displayed.

Press ESC to exit to the main menu.

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THE VOICE EDITOR PROGRAM

The Voice Editor is used to record, edit, and playback words or phrases through the speaker of your Apple. It is also used to transfer words and Voice subroutines to other disks, which have been initialized by The Voice program.

To enter The Voice Editor, select option 2 from the main menu and press RETURN. The Editor menu will be displayed:

```
        T H E    M U S E    V O I C E

    1.  RECORD A WORD

    2.  PLAY BACK WORD IN MEMORY

    3.  PLAY BACK A PHRASE FROM DISK

    4.  SAVE WORD ON THE DISK

    5.  SAVE ALL WORDS IN MEMORY TO DISK

    6.  LOAD ALL WORDS FROM THE DISK

    7.  SORT THE VOCABULARY ON THE DISK

    +/- CHANGE PLAY BACK RATE      5

    <PRESS CTRL-Z TO CLEAR MEMORY>

        ENTER YOUR SELECTION ▶
```

Editor options are explained in detail on the following pages.

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OPTION 1. RECORD A WORD

   If the pre-recorded vocabulary of The Voice doesn't contain the words you want to say, you can record your own vocabulary!   It's easy - just follow the steps outlined below, and with a little practice, you'll soon have all the words you need.

   The Voice allows you to monitor words as you record them and play them back immediately, so you always know what sound you will hear before it is saved on your vocabulary disk.   Enter the record mode by pressing 1 from the editor menu.   The screen will display the message PRESS RETURN TO START RECORDING, THEN PRESS RETURN TO STOP RECORDING. When in the Record Mode, the Monitor can be turned on or off by pressing the M key. Follow one of the methods outlined below to record words on a disk using a standard cassette recorder:

   METHOD 1 - Direct Recording

   1. Make sure the monitor jack on the tape
       recorder is connected to the tape input
       jack on the back of the Apple.

   2. Place the tape recorder in the RECORD
       mode.

   3. Select option 1 from the editor menu.
       Anything spoken into the microphone of
       the recorder will now be monitored
       through the speaker of the Apple.

   4. Press RETURN to begin recording, and
       immediately speak the word you want to
       record.

   5. Press RETURN to stop recording. This
       should be done immediately after speaking
       the word.

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After pressing RETURN to stop recording, the word edit screen will be displayed. Word editing is described following the explanation of method 2.
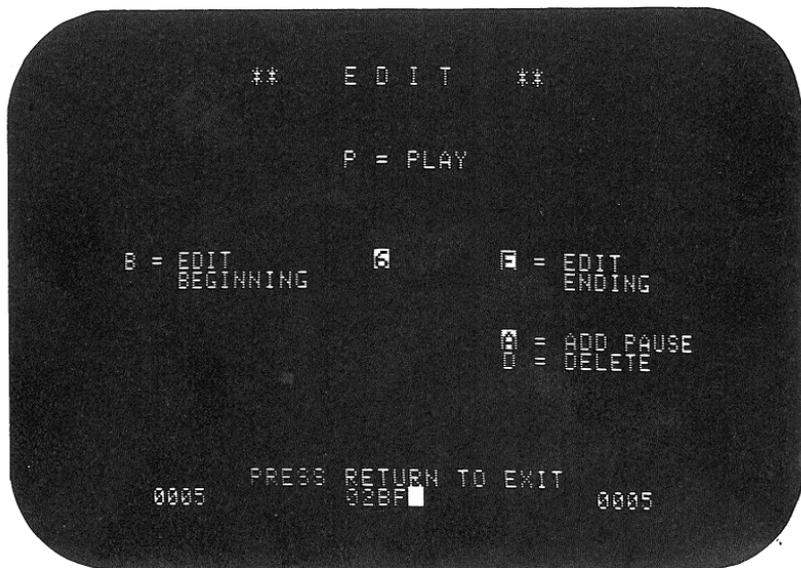
METHOD 2 - Transferring Words from cassette

1. Record the words on tape that you would like to transfer to The Voice. Experiment with several different pronunciations of each word so that the best sounding one can later be saved on the disk.

2. Connect the monitor jack of the tape recorder to the tape input jack on the back of the Apple.

3. Select option 1 from the editor menu. Anything played on the tape recorder will now be monitored through the speaker of the Apple.

4. Place the tape recorder in the play mode.

5. Press RETURN to start Voice recording. This should be done immediately before the word to be transferred is spoken. You may want to record signal words to help with the timing.

6. Press RETURN to stop recording. This should be done immediately after the good word has been spoken.

Several factors affect the voice quality, and should be considered when recording words. The tone and volume settings on the tape recorder may affect the sound of the word. Experiment to see which combination of settings is best for your recorder. Recording with The Voice monitor off may eliminate feedback if present. With The Voice, it's easy to experiment to produce the best sound!

Word Editing

After pressing RETURN to stop recording, the word edit screen will be displayed. Word editing allows you to delete spaces or excess noise from the beginning or end of the word. You can also add spaces (quiet) to either end of the word so that there will be an even pause between words when spoken in a phrase.

The Word Edit Screen

```
        **    E D I T    **

             P = PLAY


B = EDIT          5      E = EDIT
    BEGINNING            ENDING

                         A = ADD PAUSE
                         D = DELETE


        PRESS RETURN TO EXIT
   0005      02BF              0005
```

The word you record will occupy a string of memory locations. The numbers (in hexadecimal) shown at the bottom of the word edit screen represent the number of leading spaces, the total number of memory locations the word occupies, and the number of trailing spaces.

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Word editing options are described as follows:

1. Press P to playback the word you have just recorded.

2. Press + to increase the playback rate.

3. Press − to decrease the playback rate.

4. Press B to position the editing at the beginning of the word.

5. Press E to position the editing at the end of the word.

6. Press D to delete spaces or sound from the beginning or end of the word. A beep will sound if noise or a part of the word is being deleted. It is sometimes desirable to delete part of the beginning or end of the word to improve the sound. Deleting just one memory location from the beginning or the end of a word does little to change its sound.

7. Press A to add spaces (quiet) to the beginning or end of the word.

8. Press RETURN to return to the editor menu.

Once the word is edited to your satisfaction, press RETURN to exit to the editor menu and then select option 4 to save the word on disk.

OPTION 2. PLAY BACK A WORD IN MEMORY

Option 2 is used to playback the first word in memory. There can be more than one word in memory, but this option will play only the first word. This is the same word that will be saved if you select option 4 from the editor menu.

OPTION 3. PLAY BACK A PHRASE FROM DISK

Option 3 of The Voice Editor is used to speak words selected from a vocabulary list. To display the vocabulary stored on a disk select option 3 from the editor menu. The screen will display the vocabulary of available words on that disk and prompt 'ENTER PHRASE>'.

Type in a few words, making sure the words are in the vocabulary and are separated by single spaces. For example: Type 'I CAN TALK' and press RETURN.

The selected words will be loaded from the disk into memory, displayed on the screen, and spoken by The Voice. Any word not on the vocabulary list will cause the computer to beep once and the phrase will be spoken up to the missing or misspelled word. After the phrase is spoken, 'ENTER PHRASE >' will be displayed again.

After trying several different phrases, you will notice that only new words must be loaded from the disk. The Voice will then have little or no delay before it speaks, since fewer words will have to be loaded each time.

As many words as possible are held in memory by The Voice, and they will be held there until more room is needed for additional words. When a word is transferred into memory its name will appear on the vocabulary list with a '>' marker next to it.

The available options when prompted by 'ENTER PHRASE>' are:

Type a phrase beginning with a character other than a '/', '+', or '-', to start a new phrase. The words used previously in other phrases will still be in memory in case they are needed.

Type a slash (/) followed by RETURN to cause the current phrase to be repeated.

Type a slash followed by additional words to cause The Voice to speak the original phrase with the new words added on.

Type a plus (+) or a minus (-) sign followed by a RETURN to repeat the phrase at a higher (+) or lower (-) tone. The plus and minus keys can also be used within a phrase to change the tone of the individual words which follow it.

Type a period (.) preceded and followed by a space to produce a pause between sentences.

Press RETURN by itself to return to the editor menu.

After entering a few phrases the vocabulary list may not be visible. Press RETURN when asked to enter a phrase and the editor menu will be displayed, then choose option 3, and the entire vocabulary will be displayed. The current phrase is still active, and can be spoken by typing '/' and RETURN.

OPTION 4. SAVE A WORD ON DISK

Option 4 is used to save the first word in memory on a disk. Identify this first word in memory before saving it by using option 2.

Select option 4 from the editor menu to display the prompt 'ENTER WORD >'. Type the name of the word you want to store on the disk. The name cannot contain any imbedded spaces and cannot be more than 12 characters long. After you enter the name of the word it will be saved on the disk and you will be returned to the editor menu. Saving a word by the same name as one already recorded on a vocabulary disk will cause the old word to be over-written by the new word.

OPTION 5. SAVE ALL WORDS IN MEMORY TO DISK

Select option 5 to save all the words in memory on to the disk. Words currently in memory are identified by a > marker when option 3 is selected. Saving all the words in memory at one time is useful if you want to transfer the vocabulary from the Voice program disk on to your own development disks. After using the Voice for a while you will probably accumulate a number of disks full of words that you have recorded yourself. When you have an application that requires a specific vocabulary, you can load the necessary words from your vocabulary disks (use option 3 or 6) and then save them all on the application disk by using option 5.

After you press 5 you will be prompted with "ENTER NAME >". Press RETURN without entering anything, and all of the words in memory will be saved on the disk, one at a time. If you enter a name before pressing RETURN, all of the words in memory will be saved on the disk, but all in one file together. This Multi-word file can be loaded just as any other word would be loaded from disk. After it is loaded, all of the words contained in it will be in memory and can be used without further disk access. Use the Multi-word files to quickly load all the words needed by a Basic program at one time when the program begins.

When a Multi-word file is created, the name of the file will also be the name of the first word in the file. For example, if the individual words HELLO HOW ARE YOU TODAY are saved as a Multi-word file called "HELLO.", then any time you load the word "HELLO.", the words HELLO HOW ARE YOU TODAY would be loaded into memory, and could then be spoken individually. To speak the word HELLO by itself, type "HELLO.". Use a word followed by a period as the name of Multi-word files so that they can be distinguished from individual word files.

When words are saved on disk using option 5, the Voice subroutines (^TSUBS) are automatically recorded on the same disk. These subroutines are necessary for using the Voice from Basic programs.

OPTION 6. LOAD ALL WORDS FROM DISK

    Editor option 6 is used to load all or part of the
vocabulary on a disk into memory. This is useful in
conjunction with option 5 for transferring words from
one disk to another. After pressing 6, any words in
memory will be cleared, a catalog of the vocabulary
will be displayed, and you will be prompted to enter
the starting word.   Enter the first word to be read
from disk.   The vocabulary will be loaded into memory
starting at that word until memory is full or until the
end of the vocabulary list is reached. If you press
RETURN without entering a starting word, the vocabulary
will be loaded starting with the first word. Press
CTRL-Q at any time to terminate word loading.

OPTION 7. SORTING THE VOCABULARY

    Select option 7 to sort the vocabulary on the disk.
The words will then be displayed in alphabetical order
when option 3 is selected. Sorting the vocabulary will
cause any words currently in memory to be cleared.

+/- CHANGING THE PLAY BACK RATE

    Press the plus (+) key to increase the play back
rate (higher tone). Press minus (-) to decrease the
play back rate (lower tone). The play back rate is
displayed in inverse on the right side of the menu
display.   The play back rate can be varied from a high
of nine to a low of one.

CTRL-Z TO CLEAR MEMORY

    Press CTRL-Z to clear all words from memory.
Options 1, 6 and 7 also clear all words from memory.

OTHER VOICE EDITOR OPTIONS

Press E when the editor menu is displayed to exit
to the word edit screen. The first word in memory can
then be edited as if it had just been recorded.
Entering the word edit screen clears all but the first
word in memory.

Press a slash (/) from the editor menu and you will
be asked to 'ENTER PHRASE >'. This is the same as
selecting option 3, but the vocabulary list is not
displayed on the screen. From this point you can use
all of the normal procedures available in option 3.

Press ESC from the editor menu to exit The Voice
Editor program and return to the main menu.

DELETING WORDS FROM THE DISK

To delete words from a vocabulary disk, select
option 3 from the editor menu. When asked to 'ENTER
PHRASE >', type in 'DELETE WORD', where WORD is the
name of the word to be deleted from the disk.

INITIALIZING DATA DISKS

There is a limited amount of space available on the program disk for storing words, so at some point words may be transferred to auxiliary storage disks. A disk must be initialized before it can accept any data.

To initialize a disk press CTRL-I from The Editor menu, insert a blank disk when prompted, and press RETURN. The ^TSUBS subroutines are automatically copied onto the disk during initialization. It will take approximately two minutes to initialize the disk and copy the subroutines. Disks initialized with The Voice program disk are in 13 sector format.

Words can be transferred to an initialized 16 sector disk on systems equipped with DOS 3.3. To do this follow these steps:

   1. Initialize a 13 sector disk by pressing CTRL-I from the main menu.

   2. Record the words you want and save them on the newly initialized disk.

   3. Run the Apple Muffin program to transfer the words and Voice subroutines to an initialized 16 sector disk.

The 16 sector disk can now be used for storing an Applesoft Basic program using Voice words. When transferring Voice words using the Muffin program, a conflict will occur if the name of the 'HELLO' program on the 16 sector disk is the same as the name of a word to be transferred. This conflict can be avoided by assigning a unique name to the 'HELLO' program.

USING THE VOICE IN BASIC PROGRAMS

To use The Voice in Basic programs the desired words, the ^TSUBS subroutines, and the Basic program must all be on the same disk. Use editor option 5 to transfer the necessary vocabulary and subroutines to the Basic program disk.

Then your Basic program will be able to load The Voice subroutines by using a BLOAD command and activate The Voice by using the proper CALL commands as described on the following pages. When The Voice is activated all PRINT commands will be directed through The Voice subroutines and instead of printing the output on the screen, the output will be spoken through the speaker in the Apple.

The Voice loads as many words as possible into the computer at one time. As new words are needed the Voice will automatically release unused words from memory to make room for the new words to be loaded from the disk. If a single sentence requires more words than can fit into open memory, the Voice will beep once and then speak the sentence up to the last word that fit in.

Memory must be allocated properly for the program to execute. The Voice subroutines which assemble and speak the program output are called ^TSUBS and will always be loaded into memory from 8B00 to 9600 hex.

The space from the user's HIMEM (must be set below 35000) to 8AFF hex is used to store words. Allocating a maximum amount of space for word storage will reduce disk input and increase the speed of operation. To allocate the maximum amount of space for word storage HIMEM should be set as low as possible while still allowing sufficient room to load the Basic program.

The user's program will be stored in memory from LOMEM to HIMEM. HIMEM must be set below 35000 so it does not interfere with word storage.

The Voice will speak program output only if the proper memory allocations, entry points and variables are used in your Basic program as described on the following pages.

VOICE MEMORY MAP

DEC	HEX		
49151	BFFF		END OF D.O.S.
		D.O.S.	
38400	9600		BEGINNING OF D.O.S
38399	95FF		END OF VOICE SUBS
		VOICE SUBS	
35584	8B00		BEGINNING OF VOICE SUBS
35583	8AFF		END OF WORD STORAGE
		WORDS	
	HIMEM+1		BEGINNING OF WORD STORAGE
	HIMEM		END OF USER PROGRAM
		USER PROGRAM	
	LOMEM		BEGINNING OF USER PROGRAM

THE VOICE ENTRY POINTS
(Use Basic CALL)

HEX	APPLESOFT	INTEGER	SUBROUTINE
8B49	35657		APPLESOFT BASIC VOICE START – entry point (for Applesoft programs only) that initializes The Voice subroutines. Must be called once after loading the binary subroutine file ^TSUBS.
8B6C		-29844	INTEGER BASIC VOICE START – entry point (for Integer Basic programs only) that initializes The Voice subroutines. Must be called once after loading the binary subroutine file ^TSUBS.
8B03	35587	-29949	VOICE ON – turns The Voice on. Call this subroutine immediately before printing words that you want spoken. When The Voice is on, all BASIC Print statements will be spoken rather than displayed on the screen.
8B06	35590	-29946	VOICE OFF – turns The Voice off. When The Voice is turned off, all BASIC Print statements will function normally and be displayed on the screen.

VOICE SYSTEM VARIABLES
(Use Basic POKE)

HEX	APPLESOFT	INTEGER	VARIABLE
8B12	35602	-29934	PRINT - controls whether or not words are displayed on the screen as they are spoken. POKE a zero into the print variable to turn the print OFF. POKE a 1 to turn the print ON.
8B13	35603	-29933	SOUND - controls whether or not The Voice will speak. If the sound is ON, The Voice will speak the words normally. If the sound is OFF, the words will be read from the disk, but not spoken. Use this to turn the sound off and on without otherwise modifying your BASIC program. POKE a 1 into the sound variable to turn the sound ON, POKE a zero to turn it OFF.
91B9	37305	-28231	TONE - controls the pitch of The Voice. The tone can have a value from zero (high pitch) to 255 (very low pitch). The normal range of the tone for understandable speech is from 0 to 9. POKE a value into the tone variable to change the pitch of The Voice.
8B11	35601	-29935	ECHO - controls whether or not Voice input is displayed on the screen as it is received by The Voice subroutines. POKE a zero into the echo variable to turn the echo OFF, POKE a 1 to turn it ON. Normally the echo should be OFF. Turning the echo ON can be an aid in debugging programs using The Voice, since it allows you to see the exact character string sent to The Voice subroutines.

INTEGER BASIC PROGRAM EXAMPLE*

```
 5 REM         DEFINE ENTRY POINTS
10 VS=-29844:VN=-29949:VF=-29946
15 REM SET D$=CTRL-D
20 D$=""
25 REM         LOAD VOICE SUBROUTINES
30 PRINT D$;"BLOAD ^TSUBS"
35 REM         CALL VOICE INITIALIZATION
40 CALL VS
45 REM         CALL VOICE ON
50 CALL VN
55 REM         SAY HELLO
60 PRINT "HELLO"
65 REM         CALL VOICE OFF
70 CALL VF
99 END
```

APPLESOFT BASIC PROGRAM EXAMPLE*

```
 5 REM         DEFINE ENTRY POINTS
10 VS=35657:VN=35587:VF=35590
15 REM SET D$=CTRL-D
20 D$=""
25 REM         LOAD VOICE SUBROUTINES
30 PRINT D$;"BLOAD ^TSUBS"
35 REM         CALL VOICE INITIALIZATION
40 CALL VS
45 REM         CALL VOICE ON
50 CALL VN
55 REM         SAY HELLO
60 PRINT "HELLO"
65 REM         CALL VOICE OFF
70 CALL VF
99 END
```

* Set HIMEM:20000 before loading or entering these sample programs

TROUBLE SHOOTING GUIDE
FOR BASIC PROGRAMS USING THE VOICE

The proper use of The Voice entry points and variables is essential to produce speech from a program. If you do have a problem, review the section on USING THE VOICE IN BASIC PROGRAMS and read the following trouble shooting guide:

PROGRAM HANGS UP

1. Make sure HIMEM has been set below 35000 before loading and running the program. Set HIMEM as low as possible so that you are still able to load the BASIC program.

2. File ^TSUBS must be loaded at the beginning of the program using a BLOAD command. Refer to the Apple D.O.S Manual for instructions for BLOADing a binary file.

3. The Voice Start subroutine (35657 for Applesoft, -29844 for Integer) must be CALLed after loading '^TSUBS'. Refer to the BASIC program examples in this manual.

4. Turn the voice OFF (CALL voice off, 35590 for Applesoft, -29946 for Integer) before attempting program INPUT.

PROGRAM WON'T SPEAK

1. CALL voice on (35587 for Applesoft, -29949 for Integer) before PRINTing the words to be spoken.

2. The PRINT statement for speech cannot be followed by a semi-colon, because it inhibits the carriage return. The Voice requires a RETURN at the end of each sentence to be spoken. Remove the semi-colon from the PRINT statement and rerun the program.

3. The Voice SOUND variable is off. POKE a "1" into the SOUND variable (35603 for Applesoft, -29933 for Integer) to turn the SOUND variable on.

PROGRAM BEEPS

1. Make sure HIMEM has been set below 35000 before loading and running the program. Set HIMEM as low as possible so that you are still able to load the BASIC program. This will allow maximum space for word storage. If the program speaks only a partial sentence and then beeps, either a word cannot be found on the disk or there is not enough space to store all the required words in memory at one time.

2. A word to be spoken cannot be found on the disk. Check the word _after_ the last word spoken and be sure it is spelled correctly and is on the disk.

3. If you can't determine whether the beep is caused by not enough memory or a missing/misspelled word look in location 8E39 hex. If 8E39 contains "01" the beep was caused by a missing or misspelled word. If location 8E39 contains "02" there is not enough room to store all the required words in memory at one time.

WORDS NOT PRINTED WHEN SPOKEN

1. The Voice PRINT variable is off. POKE a "1" into the PRINT variable (35602 for Applesoft, -29934 for Integer)to turn the printing on.

WORDS PRINTED TWICE

1. The Voice ECHO variable is on. POKE a "0" into the ECHO variable (35601 for Applesoft, -29935 for Integer) to turn the ECHO off.

D.O.S FILE LOADING COMMANDS ARE PRINTED

1. Turn off the printing of D.O.S commands with a "NOMON I,O,C" command at the beginning of your program. Refer to the Apple D.O.S. manual for more information about the NOMON command.

DISK I/O ERRORS WHEN READING WORDS

1. Reading words directly from The Voice program disk with a BASIC program will produce disk I/O errors. The necessary words must be transferred to the Basic program disk by using The Voice editor option 5. Option 5 also copies the binary file "^TSUBS" to the Basic program disk. Words on The Voice program disk can only be read from programs on The Voice disk.

CHANGING THE DEMO MESSAGE

The message spoken in the Demo program can be changed to speak anything you like using the Muse Super-Text program. Use Super-Text to build a file of the sentences to be spoken by the Demo, but make sure you follow these rules:

1. Use a RETURN in Super-Text to start new sentences for the Demo.

2. Type in words to be spoken by The Voice Demo. Words must be separated by spaces, and must be recorded on The Voice program disk.

3. Use a period (.) preceded and followed by a space to produce a pause when the text is spoken.

4. The last character in the file must be a RETURN character.

5. After the file is created, insert The Voice program disk (while Super-Text is still running) and use the Super-Text Save command (CTRL-S) to save the file on The Voice disk. When asked to enter the file # or name to be saved, type in the name ©DEMO TEXT and press RETURN. The new Demo Text will be written on your Voice disk.

When The Voice disk is reloaded and the Demo is run, the new ^DEMO TEXT file will be spoken and repeated.

The Santa message can be changed, by using the above procedure for the file ^SANTA TEXT.

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