

COMAND NAVIGATION SPOKEN LANGUAGE MODIFICATION

Many users know how to access the service menu (NAV +5) in order to change the language spoken by the navigation system (i.e., British, American, German, etc.). However, those same users also know that the changes are lost as soon as the vehicle is turned off.

A solution has been found that allows a user to modify a HARMAN BECKER North American MAP DVD 8.0 to allow for a British woman's voice by default.

The modifications outlined in these instructions were performed using the following tools:

NAV DVD: *Harman Becker North America Map DVD 8.0*

Hex Editor: *Hex Workshop v6 (BreakPoint Software)*

Image Burning Software: *ImgBurn v2.5.0.0*

DVD Burner: *Sony DRX-830UL-T*

Media: *Generic DVD+R 8x*

Vehicle: *2005 E-320 (yours might differ)*

I begin these instructions with the assumption that the required applications (Hex Editor, ImgBurn, etc.) are already installed on your computer. If not, now is the time to do so.

Step 1: Create a new folder on your desktop labeled "NAV". This folder will be your working directory for this mod.

Step 2: Insert your original NAV DVD into the DVD drive. Now is the time to go out to your car and get the disc if you haven't already done so.

Step 3: Open ImgBurn and select *Create image file from disc*. Don't worry if you accidentally choose the wrong function. If you do, simply select "Mode – Ez-Mode Picker" from the menu bar and you will be returned to the selection window.

Step 4: Make the ImgBurn *destination directory* the NAV folder that you created on your desktop.

Step 5: Choose a filename for your image. I named mine: *Mercedes-Benz Harman Becker COMAND - North America Map DVD v.8.0*

Step 6: Begin the process by clicking the *Read* button. Your DVD image will now be transferred to the NAV folder on your desktop. The process will usually take several minutes, so if you need to take a quick break now is probably a good time to do so.

IMPORTANT : Once the transfer is complete, DO NOT EXTRACT THE CONTENTS OF THE ISO FILE. YOU MUST EDIT THE ISO FILE DIRECTLY AND NOT THE INDIVIDUAL FILES THAT ARE FOUND WITHIN IT. THIS MODIFICATION, AND THE NAV DVD ITSELF, WILL NOT WORK IF YOU EDIT THE FILES INDIVIDUALLY.

Step 7: **Close ImgBurn.**

Step 8: **Open the image using Hex Workshop.** Open the NAV folder and right click on the large file that you see. Select *Hex Edit with Hex Workshop v6*. Don't worry about the small MDS file – we aren't going to be using that file.

The following is an example of what you will see when viewing the image in Hex Workshop. Note that the offset values (values in the far left column) in this example are different from what I specify in step 9. This is simply because this example was taken from a different version DVD. However, you can still see from this example that our goal is to swap the values (middle column) highlighted in blue with those highlighted in red and vice versa. Look closely at the text string (far right column) and you will see the corresponding red and blue highlights there as well.

```
00000280h: 2E 53 4D 35 00 00 00 00 0E DD D6 68 00 40 2C 00 ; .SM5.....ÿÖh.@,.
00000290h: 04 61 0E 00 46 5F 46 52 41 55 31 5F 56 31 36 32 ; .a..F_FRAU1_V162
000002a0h: 30 5F 33 32 2E 53 4D 35 00 00 00 00 F7 F6 07 48 ; 0_32.SM5....÷ö.H
000002b0h: 00 A8 3A 00 B4 2B 0D 00 47 42 5F 46 52 41 55 31 ; .":.~+.GB_FRAU1
000002c0h: 5F 56 33 32 31 30 5F 33 32 2E 53 4D 35 00 00 00 ; _V3210_32.SM5...
000002d0h: 07 B3 2B 41 00 D8 47 00 44 20 0F 00 49 5F 46 52 ; .³+A.ØG.D ..I_FR
000002e0h: 41 55 32 5F 56 30 33 31 30 5F 33 32 2E 53 4D 35 ; AU2_V0310_32.SM5
000002f0h: 00 00 00 00 D2 9B 7A 07 00 00 57 00 80 0C 0D 00 ; ....ö>z...W.€...
00000300h: 4E 4C 5F 46 52 41 55 31 5F 56 31 38 32 30 5F 33 ; NL_FRAU1_V1820_3
00000310h: 32 2E 53 4D 35 00 00 00 A3 AC 08 91 00 10 64 00 ; 2.SM5...ƒ~.`.d.
00000320h: 3C 3D 0F 00 50 4F 52 5F 46 52 41 55 31 5F 56 30 ; <=..POR_FRAU1_VO
00000330h: 36 31 30 5F 33 31 2E 53 4D 35 00 00 F8 98 9E 33 ; 610_31.SM5..ø~ž3
00000340h: 00 50 73 00 CC 3C 0F 00 53 5F 46 52 41 55 31 5F ; .Ps.Ï<...S_FRAU1_
00000350h: 56 31 36 31 30 5F 33 31 2E 53 4D 35 00 00 00 00 ; V1610_31.SM5....
00000360h: B0 66 FA 25 00 90 82 00 C4 94 0F 00 54 55 52 5F ; °fú%.□, .Ä" ..TUR_
00000370h: 4D 41 4E 4E 31 5F 56 30 36 31 30 20 5F 33 31 2E ; MANN1_V0610 _31.
00000380h: 53 4D 35 00 52 38 37 47 00 28 92 00 FC 34 0D 00 ; SM5.R87G.('.ü4..
00000390h: 55 53 41 5F 46 52 41 55 31 5F 56 32 30 32 30 5F ; USA_FRAU1_V2020_
000003a0h: 33 32 2E 53 4D 35 00 00 E6 36 63 43 00 00 00 00 ; 32.SM5..æ6cC....
```

Step 9: **Modify the following offsets as follows:**

005B4AB0 thru 005B4AB7: 00 28 92 00 FC 34 0D 00

005B4B88 thru 005B4B8F: 00 A8 3A 00 B4 2B 0D 00

00ED7080 thru 00ED70A3: 47 42 5F 46 52 41 55 31 5F 56 33 32 31 30 5F 33 32 2E 2E 5F 73 69 7A 65 5F 6F 66 5F 69 6E 64 65 78 5F 20 (note: these offsets specify the *file*)

00ED70AA thru 00ED70AD: 34 38 36 30 (Note: these offsets specify the *size of index*)

00ED70C4 thru 00ED70C9: 38 35 38 32 39 36 (Note: these offsets specify the *size of data*)

Note: These offsets are from the Harman Becker North America Map DVD 8.0 disc. Your offsets might be different if you are using a different version disc.

The first two offset changes shown above (005B4AB0 thru 005B4AB7 and 005B4B88 thru 005B4B8F) were borrowed from another member's earlier attempt at changing the default language. I'm not sure if they are actually required to make this work; however, I included them in this instruction since my modified disc includes them and it works just fine.

Here is a look at the original text string for the last three groups of offsets (shown in green):

```
....._type_   ZF5.._version_  2020.._title_   Frau1.._language_  USA.._dialect_  
INT 3.2.._file_   USA_Frau1_V2020_32.._size_of_index_  4836.._size_of_data_  860696.._c_  
!14! USA_Frau1_
```

And now a look at the modified text string for the last three groups of offsets with the changes shown in bold red:

```
....._type_   ZF5.._version_  2020.._title_   Frau1.._language_  USA.._dialect_  
INT 3.2.._file_   GB_FRAU1_V3210_32.._size_of_index_  4860.._size_of_data_  858296.._c_  
!14! USA_Frau1_
```

Note: There is an extra space (hex 20) added to the end of the string that specifies the *file*. This is done to compensate for the loss of a letter when we switch from USA (3 letters) to GB (2 letters).

Step 10: **Save your work.** Select *File – Save* from the Hex Workshop menu.

Step 11: **Close Hex Workshop.**

Step 12: **Remove the NAV DVD from you DVD drive and replace it with a blank DVD.**

Step 13: **Open ImgBurn and select *Write image file to disc*.**

Step 14: **Select a Source file.** This is where you will point to the modified image that you just created in your NAV folder.

Step 15: **Begin the burn process by clicking the *Write* button.** It's time for another break as this process will probably take a few minutes to complete.

Step 16: **Test the modded disc.**

- a) Insert the original disc into you NAV player and allow it to boot. Press the *RPT* button to hear what voice is used. It should be the American woman telling you that "Navigation is not active."
- b) Press and hold NAV + 5 (keypad) buttons to access the service menu.
- c) Select *Version No.* from the list.
- d) Page down to lines 27 and 28. Line 27 should read *2020*, and line 28 should read *F USA_FRAU1_V2020...*
- e) Press the *Back* soft key to return to the main NAV menu.
- f) Remove the original NAV disc from the NAV player.
- g) Insert the modified disc into the NAV player.
- h) Close the trunk.
- i) Press and hold NAV + 5 (keypad) buttons to access the service menu.
- j) Select *Language* from the list.
- k) Select *English GB*.
- l) Press the *Back* soft key to return to the main NAV menu.
- m) Turn off ignition and remove key. Close all doors and wait a few minutes for system to "sleep."
- n) Turn on ignition. NAV display might show "Reading Disc" for a brief moment.
- o) Press the *RPT* button and you should now hear a British woman telling you that the "Navigation is not active."
- p) If you want to, you can confirm the changes were stored by repeating steps b, c, and d. Line 27 should now read *3210* and line 28 should read *GB_FRUA1_V3210...*

Step 17 (optional): Have one (or two) of your favorite beverages to celebrate this small victory.

I hope you find these instructions useful. I'm not a programmer, nor am I a technical writer; however, I've done my best to make this modification as easy to understand as possible. If you find ways to make it more readable for others, please feel free to modify and repost as you see fit.

Once again, this modification was performed using version 8.0 of the North American Map DVD. I don't know how much of a difference there is with other versions; however, having a different version doesn't necessarily mean that you are out of luck. If you examine the text string carefully, like I did, you should be able to figure out what changes need to be made and where.

I should also note that my first couple of attempts at this modification were not successful and resulted in the NAV system reporting "Navigation Not Available." All was returned to normal by simply removing the modified DVD and inserting the original NAV DVD.

Best of luck.