



NEWSLETTER

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Current Central Station 3 Version – 2.5.2 (6)
Current Central Station 2 Version – 4.3.0 (11)
Current Mobile Station Version – 4.15.0.10

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Summer is almost here, and we are ready for our show in the San Francisco Bay Area: EuroWest 2024. EuroWest is always a favorite since there is so much Märklin there and many friends to talk trains. We hope to see a lot of club members there during the show.

Our first article is about a not so simple conversion of a V100/V212 diesel, and our second article is “A View of the LOC update in the CS3.”

Another Difficult Conversion

In some of my articles, I like to inform people about tougher conversions so they can judge whether it is a conversion they want to tackle themselves. So, once again, I have a locomotive conversion from a customer that is not so simple.

The Märklin V100/V212 diesel (3072, 3147 etc. Fig. 1), is a good example of a difficult digital conversion. From just looking at this locomotive, it looks like a simple matter of putting a motor and decoder in it. At least that is what I thought years ago when I tried it for the first time.



Fig. 1 - Märklin 3647 V212

Teardown

The conversion starts with the usual step of disassembly and cleaning. The motor block is separate from the drive and is disassembled separately on this model. Where this is convenient, it does require a little more cleaning (Fig. 2).



Fig. 2 - Teardown and cleaning

Motor Fitting

Once the locomotive is disassembled, the upgrade can begin. A new 60944 motor kit is to be installed (Fig. 3) but the problem is that the frame is too narrow.

This can be seen in figures 4 and 5 where the motor magnet meets the frame so I will scribe a line in the frame to remove some material (Fig. 5).

I removed a little extra material as shown in figure 6 and 7 to allow for the alignment pins in the magnet. The magnet must be inserted at a slight angle then the magnet alignment pins can be inserted into the frame alignment holes to properly position the motor.



Fig. 3 - 60944 Motor kit

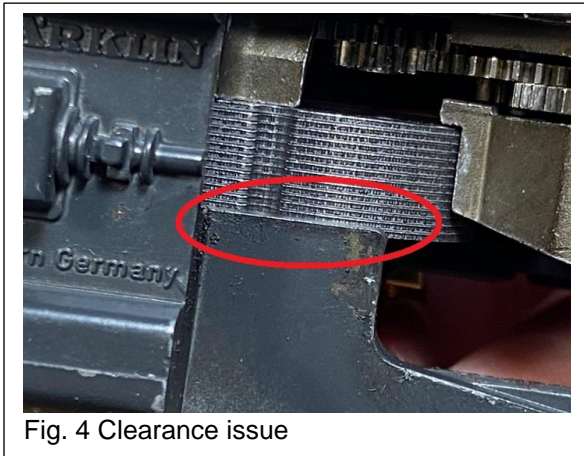


Fig. 4 Clearance issue

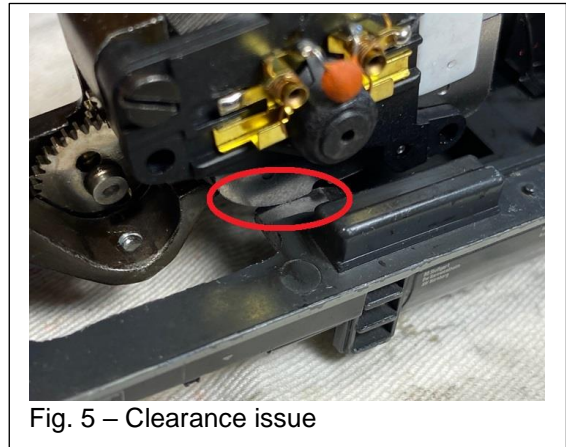


Fig. 5 - Clearance issue

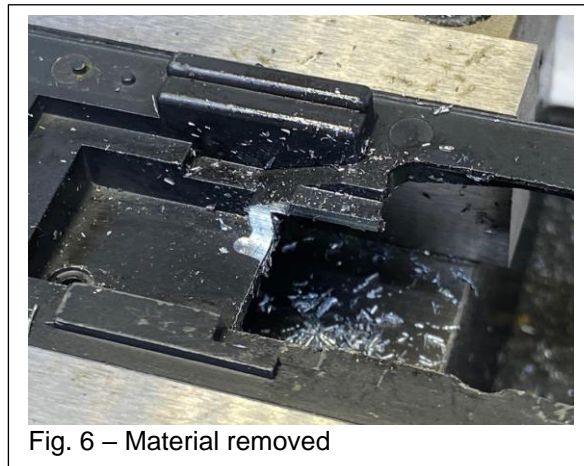


Fig. 6 - Material removed

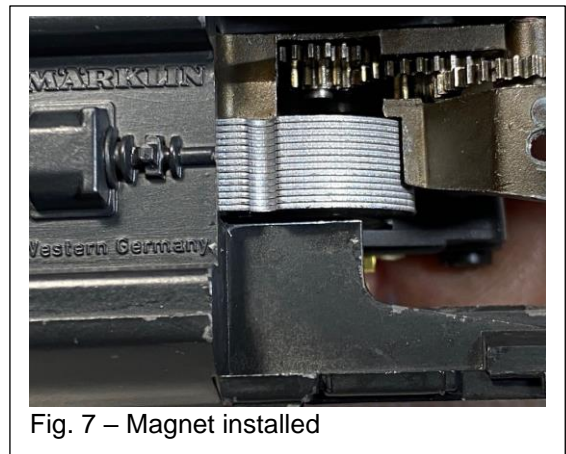


Fig. 7 - Magnet installed

While the frame is set up in the mill vice, there is a little more material to be removed. The motor fits into the frame as it is but the lower brush-plate screw will not clear the frame, therefore material must be removed to allow clearance for the screw head (Fig. 8).

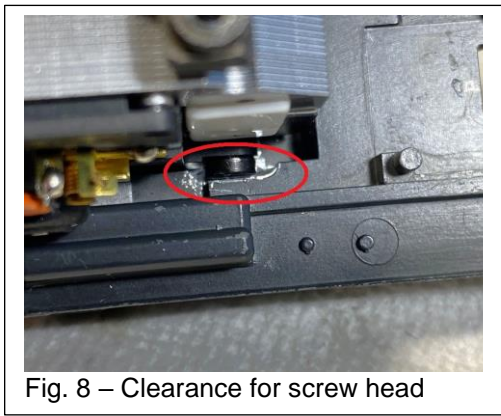


Fig. 8 – Clearance for screw head

Bogie Clearance

Now that the motor is in the frame, there is an issue of clearance for the powered bogie. While it mounts correctly, it does not pivot completely in one direction. The problem is the motor magnet interferes with the bogie (Fig. 9) so the bogie cannot pivot all the way to the left. The lower half of the magnet will need material removed as shown in figure 10.

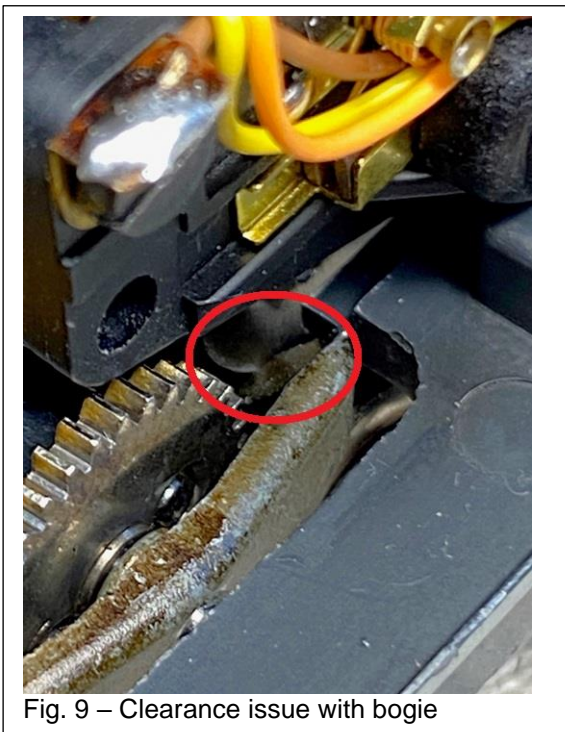


Fig. 9 – Clearance issue with bogie



Fig. 10 - Bogie clearance in motor magnet

Figures 11 and 12 show the magnet installed with material removed for bogie clearance and the full range of motion to the left with the bogie installed.

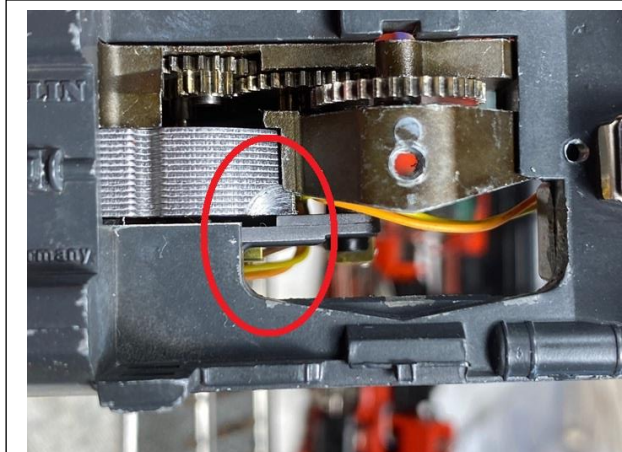


Fig. 11 Magnet installed with clearance

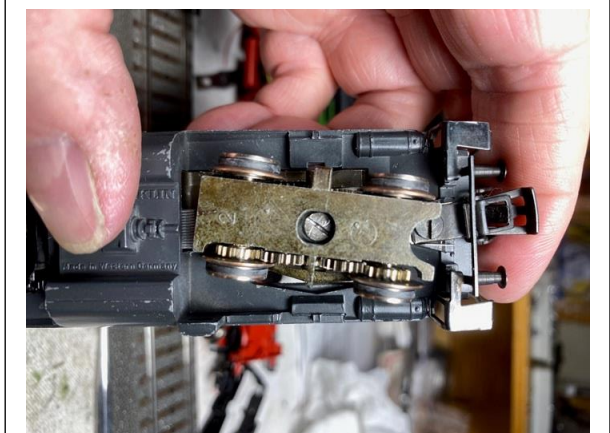


Fig. 12 – Bogie with full range of motion

Another Issue Discovered

While I was test fitting the bogie, I noticed another problem. Since this locomotive has been well used when I laid the powered bogie on its side the gears could almost fall out. As seen in figure 13 and 14, the gear holes are very worn.



Fig. 13 - Bogie with worn gears



Fig. 14 – Worn gears on axles

I ordered a new set of gears and determined I did not need new gear axles. I removed the wheels and replaced the gears with new ones as seen in figures 15 and 16.



Fig. 15 – New gears installed



Fig. 16 – New gears installed

Once the mechanical issues were taken care of and the motor installed, I was able to proceed with the decoder installation (Fig. 17). I did not document this process as I have shown how to do it in past articles, but figure 18 shows the completed locomotive.



Fig. 17 – Motor upgrade complete

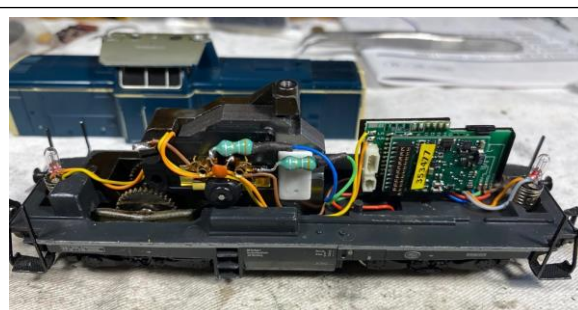


Fig. 18 – Finished digital conversion

Once again, this conversion is for those who are up for this challenge. I should note that obviously I have invested in a small milling machine. This is because I want my work to look more professional. I believe this work could be done using a lot of care and caution with a handheld grinder, so if this is attempted, please be careful!

Enjoy your hobbies!

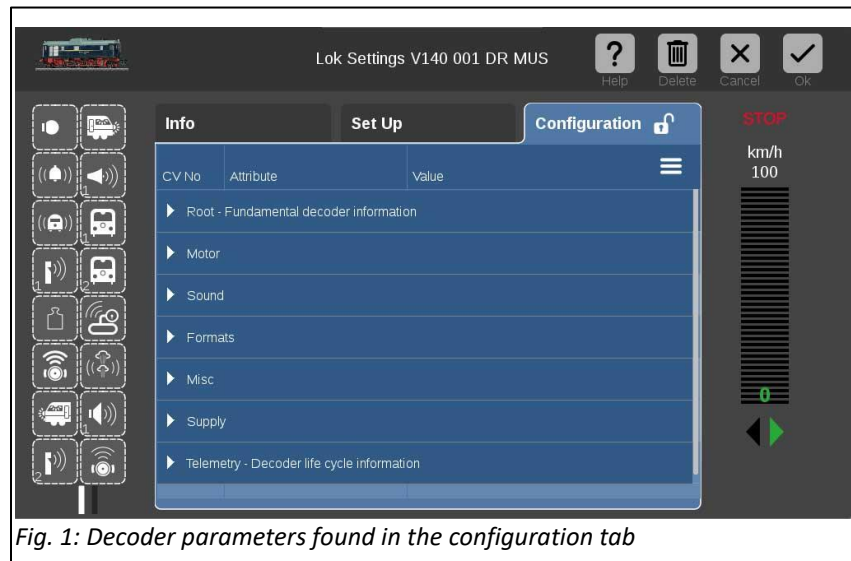
Rick Sinclair

A Look into the CS3 Loc Update Feature

Like home computers or mobile devices, there are updates to your locomotive decoders that you may decide to apply, however, these are not often necessary if your trains are operating well on their own. In most cases there are subtle refinements on how the decoders operate. I will post a translation of some of the most recent updates at the end of this article, so you can judge for yourself.

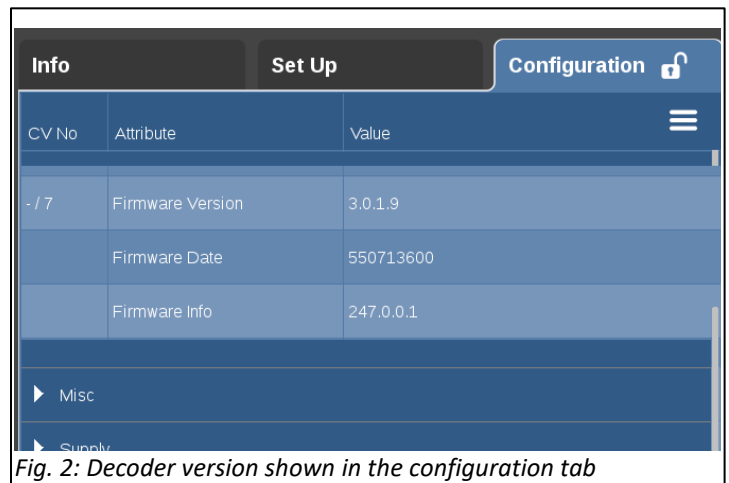
You can install decoder updates through Märklin's mDecoder tool, but in this article, I will show you some of the procedures for doing a decoder update through your CS3.

You can check your decoder's firmware version by accessing the configurations tab in the Loc Edit mode (Fig. 1).



Open the Root data and scroll towards the end of the section to locate the version data. (See Fig. 2).

Updating the decoder's firmware is not initiated with the configuration tab. Instead, you will need to go to the Set Up tab in the loc edit mode.



You will see two buttons that can affect the decoder on a global level. The “Loco Reset” and “Loco Update” buttons (see Fig. 3).

It is common to edit many of the MFX decoder values through the main track, but you will not be able to use the Loco Update button successfully. In this case, you will get the warning box shown in figure 4. The programming output of the CS3 is required for the Loco Update to load.

Clicking on the Loco Update button should display the screen shown in figure 5. There are four updateable features with five headings Type, Info, Upd, File, and View (update information).

Type and Info are static and just states the Current version of data on the decoder. The four updateable types are: Decoder Fw, Decoder FDS, Sound Flash and Decoder UDS.

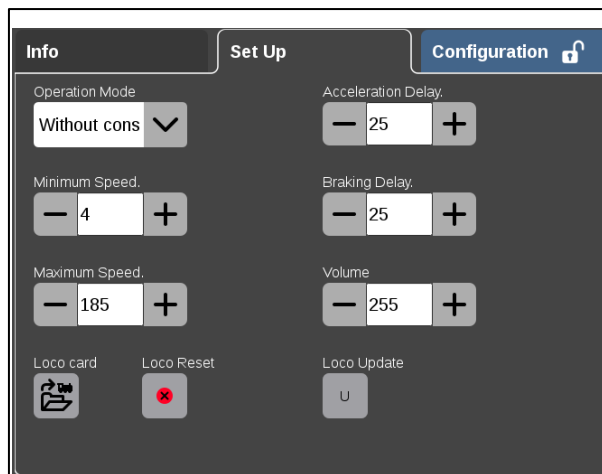


Fig. 3: The Setup Tab in the loco editor

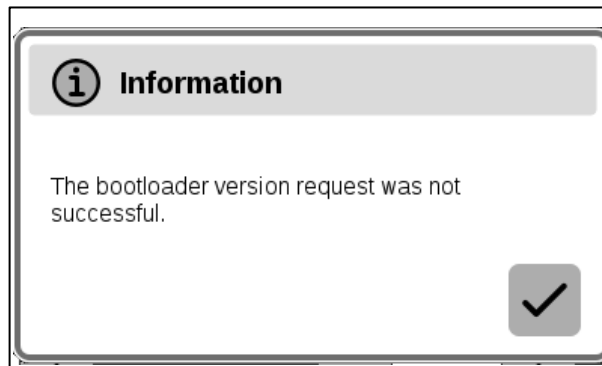


Fig. 4: Update function not reaching decoder

Type	Info	Upd	File	View
Decoder Fw	Actual: #263819, Typ:247, SW V:3.0.1.9	<input type="checkbox"/>		
Decoder FDS	Actual: #37212 REV:67 UID:73FB4468	<input type="checkbox"/>		
Sound Flash	Actual: #0	<input type="checkbox"/>		
Decoder UDS	Actual: #196609 REV:9 UID:73FB4468	<input type="checkbox"/>		

Fig. 5: Loco Update selection table

The other three columns are somewhat interactive, and there is a specific order in which to operate. For the Upd (update selection) to have any meaning, you need to select an update file. Figure 5 shows the column headers and the four updateable features (left column)

Type	Info	Upd	File	View
Decoder Fw	Actual: #263819, Typ:246, SW V:3.0.1.10	<input type="checkbox"/>	<input type="text" value=""/>	
Decoder FDS	Actual: #60976 REV:67 UID:73F846E8	<input type="checkbox"/>		

Fig. 6: Clicking on the 'File' Column

Type	Info	Upd	File	View
Decoder Fw	Actual: #263819, Typ:246, SW V:3.0.1.10	<input type="checkbox"/>	<input type="text" value=""/>	
Decoder FDS	Actual: #60976 REV:67 UID:73F846E8	<input type="checkbox"/>		
Sound Flash	Actual: #:0	<input type="checkbox"/>	mSD3_263819_246_v3-3-1-0.html	

Fig. 8: Click on down carat (arrow) to access update file(s)

The 'File' column may not seem like there is any function as you need to click on it. At first, it will just show a white box with a pull-down menu indicator (Fig. 6). You will have to click on the down arrow to reveal the menu options (Fig. 7).

Type	Info	Upd	File	View
Decoder Fw	IST: #263819, Typ:246, SW V:3.0.1.10 NEU: #263819, Typ:246, SW V:3.3.1.0	<input checked="" type="checkbox"/>	mSD3_263819_246_v3-3-1-0.html	
Decoder FDS	Actual: #60976 REV:67 UID:73F846E8	<input type="checkbox"/>		

Fig. 7: An update file has been selected

For this decoder, I found that there was only a file under the 'Decoder Fw' row. The other rows pull-down menus were blank.

Once you select the file, the Upd checkbox will check itself and the Views 'I' icon will become active. You can see this in figure 8.

By clicking on the 'View' column icon, a popup window will display the update history throughout the life of that decoder type. Fig. 9 shows the Changelog, which displays the details of changes for each update (with the most recent at the top). However, this is all in German, but you can use a translator for a general idea of any bug fixes and modifications to the decoder.

Update Info

Firmware für einen märklin Sound Decoder		
Decoder	mSD /3 - märklin Sound Decoder /3	
Spur	H0	
Speicher	64 MBit	
Protokolle	Analog : AC, DC Digital : MM, DCC , MFX+	
Artikel	-	
Typ	Seriendecoder / Spielwelt	
Version (fwd)	3.3.1.0	
Datum	12. Juli 2023	

Changelog

Dieser Changelog soll Ihnen helfen zu erkennen, welche Verbesserungen an der Firmware von Version zu Version durchgeführt wurden. Bitte haben Sie Verständnis, dass kleinere oder unbedeutende Änderungen hier nicht erwähnt werden können.

Fig. 9: The icon in the 'View' column displays the update/changelog for the update file

Finally, you can click on the 'Ok' button and that should begin to load the update file into the decoder. You should see a succession of dialog boxes shown in Fig's 10 & 11. This will be an update precaution and the progress bar.

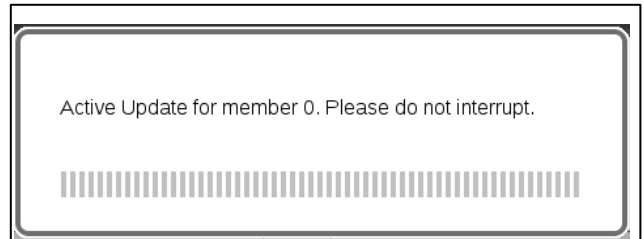


Fig. 10: Procedural warning not to interrupt

Once update is complete, you will see the status of the update and a procedural warning that a decoder Reset may be required (Fig. 12).

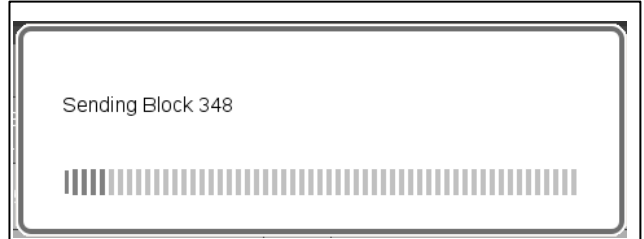


Fig. 111: Update progress bar

You should not have to take any action other than clicking the Check box, as there is a final dialog box that displays signifying the completion of the decoder firmware update (Fig. 13).

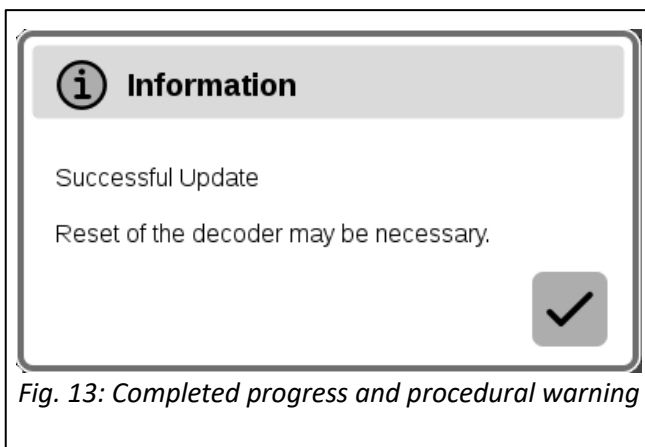


Fig. 13: Completed progress and procedural warning

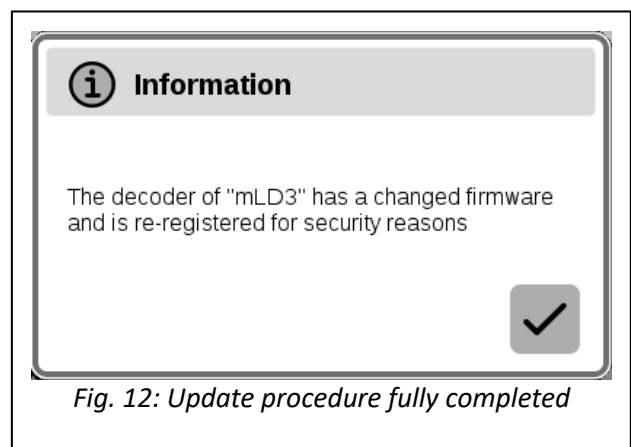


Fig. 12: Update procedure fully completed

Overall, updating your loco decoder firmware is a simple task. The displayed method was using an mLD3 21-pin decoder and updated via the Märklin Test Board (60970). Connections to the test board are through the programming output of the CS3 wired to the track input of the test board. This connection would mimic the exact conditions of a decoder mounted in a lok on the programming track.

Curtis Jeung

Upcoming appearances:

- **ONLINE Webinar**
Wednesday, June 12, 2024
- **Eurowest – Hiller Aviation Museum, San Carlos, CA**
Saturday-Sunday, July 13 – 14, 2024
Visit ete.org/eurowest for more information on attending this popular event.

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