

HarnesSys™

User Manual
for the
UPDATE WIRES
Program

IAI Publication Number TSN140/930359

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HarnesSysTM

User Manual
for the
UPDATE WIRES
Program

List of Effective Pages

At present, there is a total of 21 pages in this user guide, as detailed below:

Pages	Revision No.	Date Issued
Title	0	31-12-97
ii-ix	0	31-12-97
1-21	0	31-12-97

Revision No. 0 is the original printing of the user guide.

Issue "B" replaces issue "A" entirely.

Please make sure that your copy of this user guide contains the correct pages.

Foreword

This user guide is one of a set of user guides that make up volume 3 of the Harness user documentation. Below is a description of the volumes of the Harness user documentation:

Volume 0 - Overview

Volume 1 - Schematics

Volume 2 - Layout Drawing

Volume 3 - Wiring

Volume 4 - Parts

Volume 5 - Integration

Volume 6 - Management and Configuration Control.

Volume 7 - Manufacturing.

Volume 8 - Technical Publications.

About this User Guide

This user guide describes the operation of the Update Wires program. Below is a brief description of the sections that comprise this user guide.

Introduction

This section provides general information about the input and output of the Update Wires program, wire status, bundle and wire issue. It also contains diagrams of a typical bundle and wire life cycle.

Invoking the Update Wires Program

This section describes the access path to the Update Wires program.

Prompts and Messages

This section describes the prompts and messages displayed during update.

The Update Process

This section describes the Update process, by presenting the wire in the data base before update, the operation to be performed, and the updated wire.

Error and Information Messages

This section lists the error and information messages issued by the Update Wires program. For each error message, the cause of its appearance and the corrective action to be taken by the user are provided.

Conventions

The following conventions are used in this guide:

Italic text

Italic text is used to indicate a word or phrase which has a special meaning with respect to Harness, such as the name of a menu or option. Italic text is also used for examples. Smaller italic text is also used for notes and helpful hints; these are also indicated by an icon (see below).

Bold text

Bold text represents the exact text that you, the user, are supposed to enter.

Bold italics

Bold italics is used for emphasis.

COURIER

Text printed in Courier font represents text that appears on your screen.



Indicates a note.



Indicates an example.



Indicates a helpful hint.



Indicates additional information.



Indicates cautionary text or a warning. Both types of text are framed in a box. A Warning, however, is printed on a raster (gray) and has the title "WARNING!".



Indicates an operation that you, the user, are to perform. Operations in a series are also numbered.



Indicates what you should see on the screen - the computer's response.



Indicates a key on your keyboard.



Indicates a path to take. This usually entails selecting a number of options from menus.



Indicates the end of the user guide.

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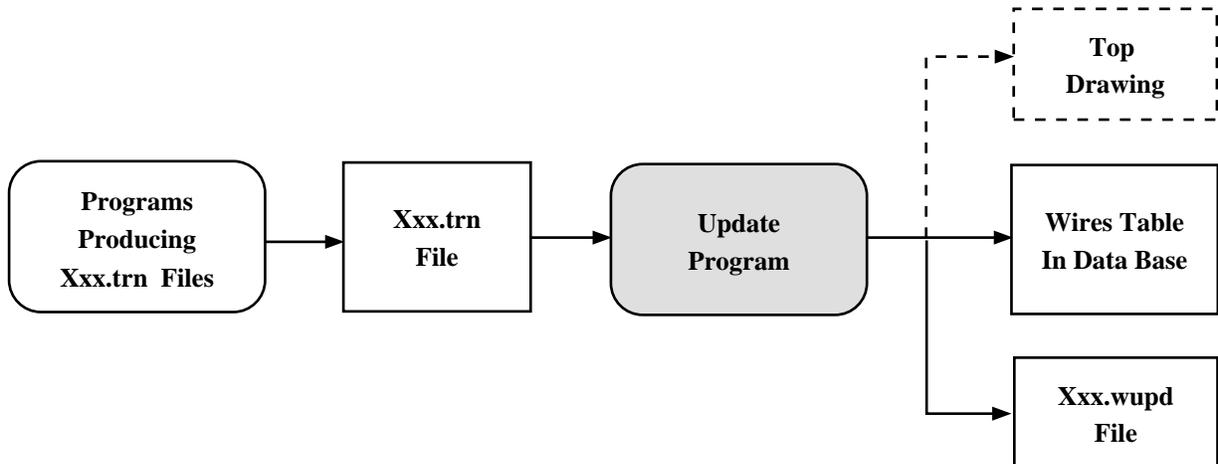
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Contents (Cont.)

The contents of this page is subject to the limitations of use specified in the front page.

Introduction

The Update Wires program applies the changes contained in a xxx.trn (transaction) file to the Wires Table. It can add new wires, update fields of existing wires, and delete wires



The Wires Updating Process

The XXX.trn file

The xxx.trn file includes data on wires, which may belong to different bundles and different schematic diagrams. The data are:

- The wire key fields (Effectivity, Wire Bundle, Dash, Wire Name and Color)
- The change code (A -- add, C -- change, or D -- delete)
- The fields required to perform the update.

For *adding* a new wire, the xxx.trn file should at least contain the wire key fields. For *changing* a wire, the xxx.trn file must at least contain the key fields and the new values of the fields to be changed. A field to be deleted should contain the # character. For *deleting* a wire, the xxx.trn file must at least contain the key fields. However, if the xxx.trn file is prepared by the Wires Integration program, it always contains all wire fields.



The **wire key** fields (*Effectivity, Wire Bundle, Dash, Wire Name and Color*) cannot be changed. The only way to change them is to delete the wire and add a new wire with the new key fields.

```
WIRE_KEY=244,BUNDLE=1221,DASH=001,WIRE_NAME=--JP00005,TYPE_FAM=A,TYPE_
^,TO_CONNEC=123YJ,TO_PIN=74,ACD=C,STATUS=0,LCD=1993/03/28 12: 9:31;
WIRE_KEY=245,BUNDLE=1221,DASH=001,WIRE_NAME=--JP00006,TYPE_FAM=A,TYPE_
,TO_CONNEC=123YJ,TO_PIN=65,ACD=C,STATUS=0,LCD=1993/03/28 12: 9:31;
```

XXX.trn File Portion

During operation, the Update program alters the following wire fields:

- Wire status
- Bundle issue
- Wire issue.

Wire Status

Wires in the data base are either *open* or *released* (the Status field contains "O" or "R"). Released wires may be used by external users, e.g., production departments. Open wires may be used by external users, only after an authorized user "Releases" them. In order to allow notifying the production departments, wires are updated in two stages:

1. The update intention (add, change or delete) is registered on an open copy of the wire.
2. The update intention becomes "reality" upon Release.

Bundle and Wire Issue

When performing Update for the first time after *Release*, the *bundle issue* in *Top Drawing* is incremented and the *bundle status* becomes Open. Further updates do not change the bundle status and issue. The program fills the *issue* of the *wires* included in the current xxx.trn file with the bundle issue. This causes that different wires of the same bundle may have different issues.

The Issue filed may have the following values: NEW, A, B ... Z, AA, AB ...ZZ, AAA, AAB ... ZZZ.

.wupd messages

Message	Translation
THE WIRE NAME _____ IN WIRE LIST ____, DASH ____ ALREADY LINKED TO THE FOLLOWING SWD(S)	A new link is established, but this wire is also linked to another drawing.
REMOVE A LINK TO CURRENT SWD FROM WIRE NAME _____, IN WIRE LIST ____, DASH ____ THIS WIRE HAS LINK(S) TO THE FOLLOWING SWD(S)	A link from the wire to an SWD was removed, however, other links, to other SWD(s), still exist.
WARNING: YOU CHANGED A RECORD THAT WAS NEVER RELEASED. ACD CODE WAS -A- IT REMAINS -A	The wire was previously modified but since it was never released the status was never changed for the wire. (code -A- was overwritten by code -A-)
---- WARNING IN ADD_WIRE: CONNECTOR FIELD MISSING ****	A wire was added with missing connector data.
*** ERROR: YOU TRIED TO ADD AN EXISTING RECORD *****	The same record was previously added.
--- DELETE: THE RECORD WILL BE DELETED IN TIME OF RELEASE	The record was marked for deletion, and will be physically deleted when the record is released.
--- DELETE: THE OLD WIRE *****	

A Typical Bundle Life Cycle

This section describes a typical life cycle of a bundle and the wires it contains. The description is accompanied by graphic representation.

The *bundles* are represented by a divided rectangle. The left cell of the rectangle contains the bundle status and the right cell, its issue.

***Representation of Bundles***

The bundle status can be Define, Open or Release. The bundle issue can be NEW, A, B, ... Z, AA, AB, ... ZZ, AAA, BBB, ... ZZZ.



Issue ZZZ means that the bundle was deleted.

The wires are represented by rectangles, divided into three cells: ACD code, Status and Issue.

ACD CODE	STATUS	ISSUE
----------	--------	-------

Representation of Wires

The ACD code can be A (add), C (Change) or D (delete). The wire status can be Open or Release. The wire issue can be NEW, A, B, ... Z, AA, AB, ... ZZ, AAA, BBB ... ZZZ.

The bundles are defined in the *Top Drawing*. The wires are drawn in *Schematic Diagrams* and stored in the data base.



Instead of the Schematic Diagram and Wires Integration programs, the Wires Data Base Modification program may be used (Project ⇨ Wires ⇨ Build Transaction ⇨ Screen Mode).

Defining the Bundle

DEFINE	NEW
--------	-----

The user defines the bundle (using **Configuration** ⇨ **Define**. For more information, refer to the Configuration Control User Manual.)

Adding New Wires

	O	NEW
1.	A	O NEW
2.	A	O NEW
3.	A	O NEW
4.	A	O NEW
5.	A	O NEW

The user draws five new wires in schematic diagrams. Then, he integrates these diagrams and updates the data base with the xxx.trn file, produced by the integration (or another program).

The status of the bundle is changed from Define to Open.

Changing Wires (before Release)

	O	NEW
1.	A	O NEW
2.	A	O NEW
3.	A	O NEW
4.	A	O NEW
5.	A	O NEW

The user changes wire number number 1 in a schematic diagram, integrates the diagrams and updates the data base with the xxx.trn file.

The ACD code of the wire remains A, since the bundle was not released yet.

Releasing the Bundle

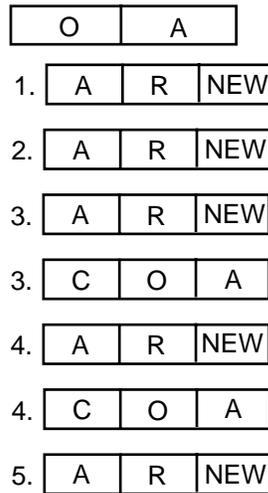
	R	NEW
1.	A	R NEW
2.	A	R NEW
3.	A	R NEW
4.	A	R NEW
5.	A	R NEW

The user releases the bundle.

The status of the bundle and wires becomes R, but the issue remains unchanged.

The system stores the data of the released bundle in a file, for possible future retrieval.

Changing Wires



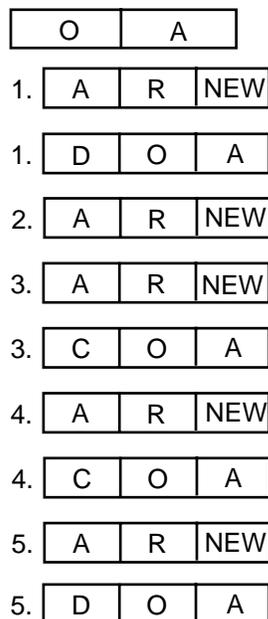
The user changes wires 3 and 4 in the schematic diagrams. Then he performs wires integration and updates the data base with the xxx.trn file.

Since this is the first Update after Release, the bundle issue is incremented and the bundle status becomes Open.

The Change intention is registered in the ACD field of the open wires 3 and 4, while the released wires remain unchanged.

The Update program fills the Issue of the open wires with the new, incremented bundle issue.

Deleting Wires



The user deletes wires 1 and 5 from the schematic diagrams. Then he performs wires integration and updates the data base with the xxx.trn file.

The Delete requests are registered of the open wires 1 and 5.

The wires will actually be deleted.

Canceling the Delete Request

	O	A
1.	A	R NEW
2.	A	R NEW
3.	A	R NEW
3.	C	O A
4.	A	R NEW
4.	C	O A
5.	A	R NEW

The user updates the data base with the xxx.trn file from the previous stage or integrates the previous revision of the schematic diagram.

The system deletes the open wir

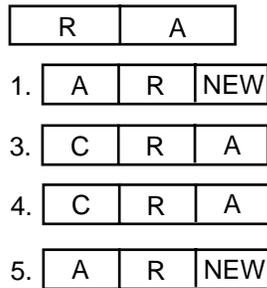
Deleting Wires

	O	A
1.	A	R NEW
2.	A	R NEW
2.	D	O A
3.	A	R NEW
3.	C	O A
4.	A	R NEW
4.	C	O A
5.	A	R NEW

The user deletes wire number 2 from the schematic diagram, integrates the diagram and updates the data base with the xxx.trn file.

The Delete request is registered the open wire 2.

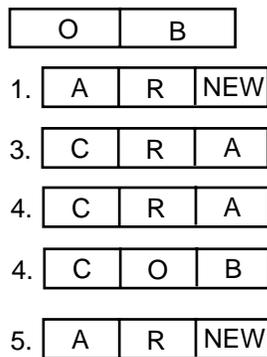
Releasing the Bundle



The user releases the bundle. The system changes the bundle status to Released.

The system deletes the released wires 2, 3 and 4 and changes the status of the open wires 3 and 4 to Released.

Changing Wires



The user changes wire number 4 in the schematic diagram, performs wire integration and updates the data base with the xxx.trn file.

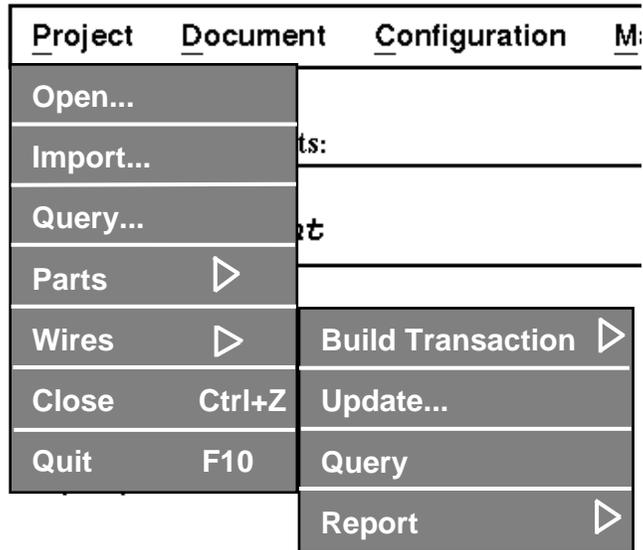
Since this is the first Update after Release, the bundle issue is incremented and the bundle status becomes Open.

The Change intention is registered in the ACD field of the open wire. The Issue field of the open wire is filled with the new, incremented bundle issue.

Invoking the Update Program

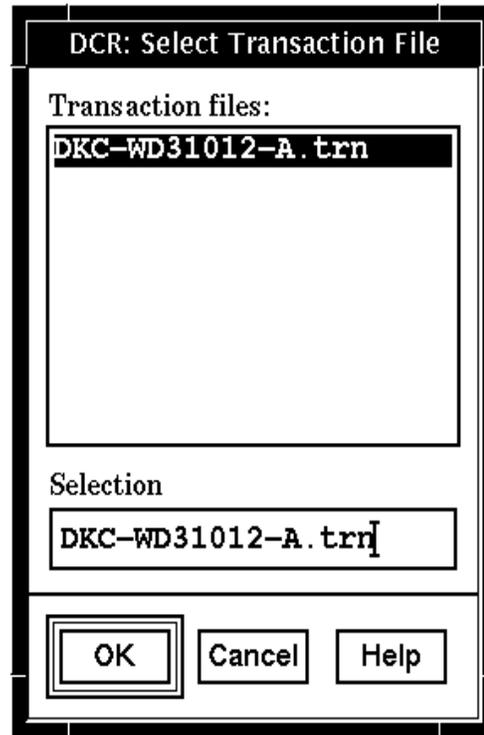
To invoke the Update program, proceed as follows:

1. Select **Project** ⇨ **Wires** ⇨ **Update**.



The function displays the following window, which already contains the

names of all the transaction files in your private directory.



2. Click on the desired xxx.trn file and on "OK". The function displays the

Wires Update window:

```

Wires Update
DCR 88 DKC-WD31012-A.trn
running /userhome/ddnd/r5a.02/hp/integrate_d.out  DCR 88 DKC-WD31012-A.trn ...

PROJECT   = DCR
DOCUMENT  = DKC-WD31012-A

Total # of records read = 2

*****
The following lines summarize the updating of wires data in the database:
TOTAL No. of RECORDS PROCESSED = 2
No. of   ADDED   RECORDS = 2
No. of   CHANGED RECORDS = 0
No. of   DELETED RECORDS = 0
No. of   LINKED  RECORDS = 0
No. of   UNLINKED RECORDS = 0
No. of   UNCHANGED RECORDS = 0
No. of   ERROR   RECORDS = 0
*****

The following files are in your PRIVATE directory:
File of wire records affected      : DKC-WD31012 <home>wupd
File of wire transactions          : DKC-WD31012-A.trn
File listing wires in SWD          : DKC-WD31012-A.trn.tbl
File of wire transactions in flat format: DKC-WD31012-A.trn.flt
Log file (screen messages)        : DKC-WD31012-A.trn.log

Do you want to commit the changes to the database.
Enter 'C' to COMMIT or 'S' to STOP : █

```

The following messages appear in this window:



ORACLE_USER = hrsdp

This is the name of the data base containing the Wires Table.



PROJECT = SDP

This is the project code.



Attention: The wire tables have been locked
for updating !!!

The Update Wires program locks the data base until the update process is completed and it does not enable other users to update the data base during the lock.

```

 -----TRN_PROCESS: started for DOCUMENT =
SDP1702-002

```

This is the name of the current bundle. This message appears for each bundle processed.

```

 total : 7 wires done

```

This is the number of wires contained in the xxx.trn file for the current bundle. If the bundle contains many wires, the program notifies the user every 25 wires.

```
TOTAL_RECORDS_PROCESSED =7
```

```

 ADDED RECORDS =1
CHANGE RECORDS =1
DELETE RECORDS =1
ERROR RECORDS =0
UN_CHANGE_RECORDS =4

```

These are statistics of the operations performed during Update. According to this message, the xxx.trn file included 7 wire records. One wire was added to the data base, one wire was changed and one wire was deleted. All the wire records in the xxx.trn file were correct, therefore, ERROR RECORDS = 0. 4 records contained information identical to the wires in the data base, therefore, there is no need to change those wires in the data base.

```

 Check REPORT TRANSACTION FILE =
<user>/harness/SDP/private/SDP.wupd

```

This is the exact name of the xxx.wupd file, produced by the update process. <user> indicates the user's home directory.



*It is good practice to check this file (in a separate window) before confirming the update process. To open the xxx.wupd file, select **Document** ⇨ **Private** ⇨ **Open** ⇨ **Filter:** *.wupd ⇨ **OK**.*

```

 Enter Y for update wires data in database
else E for exit ?

```

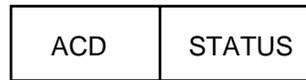
Confirm the Update by pressing **Y** or cancels the update by pressing **E**.



If the contents of the xxx.wupd file is not satisfactory, correct the xxx.trn file and resume the Update program.

The Update Process

The Update process is visually depicted below. Each wire is represented by a divided rectangle. The left cell contains the ACD code of the wire. The right cell contains the wire status. The ACD code may have the following values: A (add new wire), C (change one or more fields of an existing wire) or D (delete an existing wire). The wire status is either Open or Released.

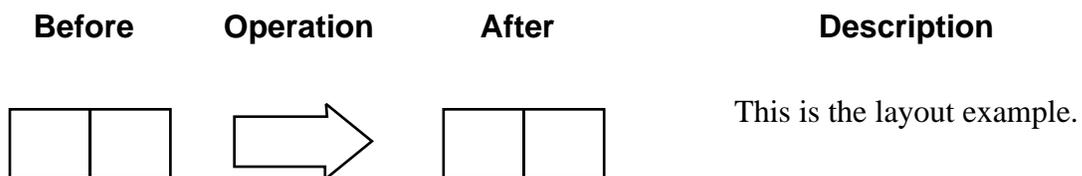


The figure below is arranged in a 4-column layout, as follows:

- **Before:** Indicates the wire (ACD and Status) in the data base, before the update.
- **Operation:** Indicates the operation to be performed on the wire (add, change, or delete). Therefore, for every wire in the Before column, there are 3 rows of Operation. The operation code is the ACD field in the xxx.trn file. The operation name appears inside an arrow.

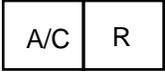
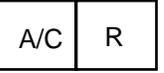
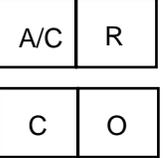
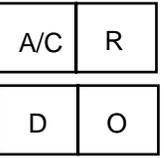


- **After:** Indicates the wire (ACD and Status) in the data base, after the update.
- **Description:** Explanation of the update process.



Before	Operation	After	Description
			Add a new wire.
			Error: a non-existing wire can not be changed.
			Error: a non-existing wire can not be deleted.

			Error: an existing wire can not be added again.
			The open wire is changed, but its status remains "A".
			The open wire is deleted.

			Error: an existing wire can not be added again.
			The released wire remains unchanged and the change is registered on a new, open copy. During Release, the released wire is deleted and the status of the open wire is changed to "R".
			The released wire remains unchanged and the deleting intention is registered on a new, open copy. The released wire will be deleted during Release.

Before	Operation	After	Description								
<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>C</td><td>O</td></tr> </table>	A/C	R	C	O		<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>C</td><td>O</td></tr> </table>	A/C	R	C	O	Error: an existing wire can not be added again.
A/C	R										
C	O										
A/C	R										
C	O										
		<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>C</td><td>O</td></tr> </table>	A/C	R	C	O	<p>The released wire remains unchanged and the change is performed on the open wire. The released wire will be changed during Release.</p> <p>If the wire before the change (in the xxx.trn file) is identical to the Released wire, the system deletes the open wire.</p>				
A/C	R										
C	O										
		<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>D</td><td>O</td></tr> </table>	A/C	R	D	O	The released wire remains unchanged and the delete intention is registered on the open wire.				
A/C	R										
D	O										

<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>D</td><td>O</td></tr> </table>	A/C	R	D	O		<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>D</td><td>O</td></tr> </table>	A/C	R	D	O	Error: an existing wire can not be added again.
A/C	R										
D	O										
A/C	R										
D	O										
		<table border="1"> <tr><td>A/C</td><td>R</td></tr> <tr><td>C</td><td>O</td></tr> </table>	A/C	R	C	O	<p>The released wire remains unchanged and the change is performed on the open wire. The released wire will be changed during Release.</p> <p>If the wire before the change (in the xxx.trn file) is identical to the Released wire, the system deletes the open wire.</p>				
A/C	R										
C	O										
		<table border="1"> <tr><td>A/C</td><td>R</td></tr> </table>	A/C	R	The released wire remains unchanged and the open wire is deleted						
A/C	R										

Error and Information Messages

The xxx.wupd file messages are listed below. Messages beginning with dashes (---) are for information only. Therefore, no action should be taken. Error messages begin with asterisks (***).

*** ERROR: IN DOCUMENT DEFINITION - BASE NUMBER OR DASH *****

Cause: The bundle is not [properly] defined.

Action: Check the bundle definition. It should, at least, contain Base Number, Dash and proper Effectivities.

*** ERROR: ADD_WIRE : ONE OF BUNDLE/DASH/WIRE_NAME IS MISSING *****

Cause: Part of the wire key is missing.

Action: Make sure that all wire key fields (in the message) exist in the xxx.trn file.

*** ERROR: ADD_WIRE : CONNECTOR FIELD MISSING *****

Cause: From/To Connector or Pin field is missing.

Action: Make sure that these fields exist in the xxx.trn file.

*** ERROR: ADD_WIRE : ILLEGAL ACD CODE *****

Cause: This wire does not exist in the data base. Therefore, the only legal operation is Add.

Action: Change ACD to "A" or correct the wire key.

*** ERROR: ADD_WIRE : YOU CANNOT ADD A RECORD WITH THE (#) SIGN *****

Cause: "#" in a field indicates that this field should be deleted. This delete request cannot be included in a .trn record with ACD = "A".

Action: Change the ACD code to "C" or delete the #.

***** ERROR: DEL_WIRE : ILLEGAL ACD CODE *******

Cause: The ACD code in the .trn file is D, but there is no wire to be deleted.

Action: Correct the ACD code.

--- DELETE : THE OLD WIRE *****

Cause: The open wire is deleted.

--- DELETE : THE RECORD WILL BE DELETED IN TIME OF RELEASE *****

Cause: The program produced an open copy of the released wire, with ACD code = "D". The wire remains in the bundle until Release. Upon Release, it will be deleted.

***** ERROR: YOU TRIED TO ADD AN EXISTING RECORD *******

Cause: The wire exists in the data base and the trn record ACD code = "A".

Action: Change the ACD code to "C" or "D" or correct the wire key.

***** ERROR: CHANGE: ILLEGAL ACD CODE *******

Cause: The ACD code in the .trn file is incompatible with the wire in the data base.

Action: Correct the ACD code.

***** ERROR: DELETE PART OR PIN NOT ALLOWED *******

Cause: A "#" appears in the From/To Connector or Pin field. These fields may not be deleted.

Action: Delete the #.

--- CHANGE: THE RELEASED RECORD IS THE SAME AS THE TRN RECORD *****

Cause: The wire in the data base and the .trn record (the wire after change) are identical. Therefore, no change is to be performed. The released wire remains unchanged in the data base.

--- ATT: YOU CHANGED A RECORD THAT WAS NEVER RELEASED *****

Cause: This open wire has no released copy in the data base.

*** ERROR: DELETE (#) IN FIELD VALUE *****

Cause: "#" in a field indicates that this field should be deleted. This delete request cannot be included in a trn record with ACD = "D".

Action: Change the ACD code to "C" or delete the "#" character.

--- ATT: CHANGE: YOU RE-ENTERED/CHANGED A DELETE RECORD *****

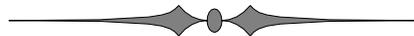
Cause: This wire is intended to be deleted from the data base (ACD code = "D") and the trn request cancels the delete intention.

--- DELETE : YOU HAVE DELETED THE LAST UPDATE *****

Cause: The open wire is deleted.

--- CHANGE: THE OPEN RECORD IS THE SAME AS THE TRN RECORD *****

Cause: The open wire and the .trn record (change request) are identical. Therefore, no change is to be performed. The open wire remains unchanged in the data base.



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Wire Update Manual Comment Form

Your comments and suggestions help us determine how well we meet your needs and also help us improve the documentation. Please fill out this form and fax it to:

HARNESS Project Manager
Israel Aircraft Industries
Engineering Center
Department 2420
Fax: 972 - 3 - 935-5049

Who Are You?

- | | |
|--|---|
| <input type="checkbox"/> Project manager | <input type="checkbox"/> Engineer (wiring designer) |
| <input type="checkbox"/> DBA | <input type="checkbox"/> Data entry personnel |
| <input type="checkbox"/> Programmer | <input type="checkbox"/> External user |
| <input type="checkbox"/> Other: _____ | |

How Do You Use This Manual?

- | | |
|--|--|
| <input type="checkbox"/> As an overview | <input type="checkbox"/> For comprehensive reference |
| <input type="checkbox"/> To learn the product or program | <input type="checkbox"/> For quick look-up |
| <input type="checkbox"/> Other: _____ | |

How do you like this manual? (1-Poor, 10-Excellent)

- | | |
|--|---|
| 1 2 3 4 5 6 7 8 9 10 | |
| <input type="checkbox"/> | Does this manual cover all the topics you need? |
| <input type="checkbox"/> | Does it contain all the information you need about the topic? |
| <input type="checkbox"/> | Is the technical information accurate? |
| <input type="checkbox"/> | Is it easy to understand? |
| <input type="checkbox"/> | Is the order of the topics logical? |
| <input type="checkbox"/> | Can you easily find what you want? |
| <input type="checkbox"/> | Are there enough examples? |
| <input type="checkbox"/> | Are the examples helpful? |
| <input type="checkbox"/> | Is the manual easy to read (page layout)? |

How Frequently do you use this manual? _____

Comments _____

Name: _____ Company: _____

Address: _____ Phone: _____ Fax: _____

Date: _____

Thank you for your time.