Early Warning TRAIN II Technical Guide

Overview

The Early Warning system accepts inbound to Railinc/Early Warning TRAIN II messages from customers and provides outbound from Railinc/Early Warning response messages. The messages are a fixed format message that has defined layouts (not variable/delimited layouts).

Message Types

Early Warning TRAIN II supports the following message types:

Inbound Messages

The following message type can be sent from customer to assign equipment to a notice or to report inspections on equipment in a notice.

- EWARN01

  The following transaction types can be sent on an EWARN01 message:

  - 9001—Assign equipment to a notice
  - 9002—Report inspections on equipment in a notice

Outbound Messages

The following message types can be sent by the Early Warning system to customer's:

- EWARN02—Valid updates to Early Warning are sent on this message type
- EWARN03—Error messages sent if any business rule validation errors
- EWARN04—Acknowledgment that EWARN01 was received by the Early Warning system
- EWARN05—Sent if an error was discovered in the format or envelope structure of the message and could not be processed because of the format error.

  The following transaction types can be sent on EWARN02 or EWARN03 messages:

  - 9000—Create notice or supplemental notice
  - 9001—Assign equipment to a notice
  - 9002—Report inspections on equipment in a notice

Message Formats

EWARN01—Inbound Transactions

EWARN01 Assignment Transaction Format

To show the definition of an EWARN01 assignment transaction the following example message will be used.

#BNSF 0056EWARN011101130808RRDC /*0001BNSFXXXX+9001MA0124AGR
0000077535000007753 5DDUN2011011309394599=0001SUM0001$0001EOM

ENVELOPING OF INBOUND EWARN01 TRAIN 2 MESSAGE for assigning equipment:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	BNSF
6	4	Office within the railroad originating the message	
10	4	Message control number	0056
14	7	Message type	EWARN01
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101130808
31	4	Reporting mark of the destination station.	RRDC
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	4	Reporting mark of the originator of the message	BNSF
49	4	Umler passkey used for security	XXXX
53	1	Indicates the beginning of a detail level record	+
54	4	Transaction type. 9001 is assignment transaction	9001
58	2	Notice type (either 'EW' or 'MA')	MA
60	4	Notice number	0124
64	4	Equipment initial of the equipment being assigned	AGR

Start Position	Length	Field Description	Value in example message
68	10	Equipment low number – lowest number in series of cars.	0000077535
78	10	Equipment high number – highest number in series of cars.	0000077535
88	4	The reporter of the assignment	BNSF
92	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011309394599
108	1	Indicates the beginning of a summary record	=
109	4	Group record control number	0001
113	3	Always SUM	SUM
116	4	Indicates the total number of detail records within the group record	0001
120	1	Indicates the start of a trailer record	$
121	4	Indicates the total number of group records within the message.	0001
125	3	Always EOM	EOM
128	1	Always hex value of ‘9C’ and indicates the end of the message.	æ

EWARN01 Report Inspection Transaction Format

To show the definition of an EWARN01 assignment transaction the following example message will be used.

#BNSF 6623EWARN011101131003RRDC /*0001BNSFXXXX+9002EW5171AGR
0000077535201101131MHBNSF2011011310025364=0001SUM0001$0001EOMæ

ENVELOPING OF INBOUND EWARN01 TRAIN 2 MESSAGE for reporting inspections:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	BNSF
6	4	Office within the railroad originating the message	
10	4	Message control number	0056
14	7	Message type	EWARN01
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101130808
31	4	Reporting mark of the destination station.	RRDC
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	4	Reporting mark of the originator of the message	BNSF
49	4	Umler passkey used for security	XXXX
53	1	Indicates the beginning of a detail level record	+
54	4	Transaction type. 9001 is assignment transaction	9002
58	2	Notice type (either 'EW' or 'MA')	MA
60	4	Notice number	0124
64	4	Equipment initial of the equipment being assigned	AGR
68	10	Equipment number of equipment having inspection reported	0000077535
78	8	Date that the inspection occurred.	20110113

Start Position	Length	Field Description	Value in example message
86	2	Inspection code	MH
88	4	Inspection reporter	BNSF
92	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011309394599
108	1	Indicates the beginning of a summary record	=
109	4	Group record control number	0001
113	3	Always SUM	SUM
116	4	Indicates the total number of detail records within the group record	0001
120	1	Indicates the start of a trailer record	$
121	4	Indicates the total number of group records within the message.	0001
125	3	Always EOM	EOM
128	1	Always hex value of '9C' and indicates the end of the message.	æ

EWARN02—Outbound Transactions

Use for create notice, supplemental notice, equipment assignment, and reporting of inspections.

EWARN02 Create Notice/Supplement Notice Transaction Format

To show the definition of an EWARN02 create notice/supplement notice transaction the following example message will be used. Note this example wraps due to the size of the TRAIN II message.

#RRDC 0001EWARN021101131117&EWS /*0001880641+9000MA0129N00Stub sill defects
062011011320120113O
O
MHMR http://www.aar.org:8080/0129

http://www.aar.org:8080/0129 AAR1000 2011011311171846+9003MA0129N00001There have been an increasing number of stub sill related defects found on tank cars during transportation. These defects pose potential safety issues and result in significant disruption to rail operations and the timely delivery of commodities to their destinations. To ensure that the rail system operates in the safest manner possible, tank car owners, repair shops and railroads are asked to inspect these structures when personnel are performing maintenance or during normal car inspection events. Railroad operating and mechani2011011311171850+9003MA0129N00002cal personnel are asked to visually inspect the critical locations that can be seen during routine inspections or maintenance events per Field Manual Rule 81 E. and AAR Section C-III, Appendix R 6.0 Stub sill tank cars must be home-shopped for stub sill inspection, and the owner must be notified if the car has been damaged to the extent outlined below: • Stub sill bent, twisted, or bulged in excess of 0.75 in. per 30 in. of sill length • Bottom tank or stub sill reinforcing plate buckled 0.5 in. in depth or more • Broken rear draft lug2011011311171850=0001SUM0003$0001EOMæ

ENVELOPING OF INBOUND EWARN02 TRAIN 2 MESSAGE for assigning equipment:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	BNSF
6	4	Office within the railroad originating the message	
10	4	Message control number	0056
14	7	Message type	EWARN02
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101130808

Start Position	Length	Field Description	Value in example message
31	4	Reporting mark of the destination station.	RRDC
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	6	Control Number	186371
51	1	Indicates the beginning of a detail level record	+
52	4	Transaction type. 9000 is create notice/supplement notice transaction.	9000
56	2	Notice type (either 'EW' or 'MA')	MA
58	4	Notice number	0124
62	1	Status of notice being sent. Values can be: 'N' = New notice 'S' = Supplement Notice 'C' = Cancel Notice	N
63	2	Supplement Number.	00
65	80	Problem title	See example.
145	2	Severity code which determines what action is to be taken.	06
147	8	Effective date	20110113
155	8	Expiration date	20120113
163	1	Assignment reporter code	O
164	80	Indicates reporting marks allowed to assign equipment to the notice. Allows up to 20 marks.	
244	1	Final Reporter Code	O
245	80	Indicates reporting marks allowed to report final inspections on equipment assigned to the notice.	
325	20	Indicates the inspection repair codes that can be reported to the EW/MA notice. Allows up to 10 inspection codes	MHMR
345	40	Restricts assignments to this notice to the mechanical designations entered. Allows up to 10 mechanical designations.	
385	100	HTML link to AAR website to view diagrams associated with the notice.	http://www.aar.org:8080/0129
485	12	Internal AAR file number	AAR1000

Start Position	Length	Field Description	Value in example message
497	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011311171846
513	Variable	Notice text variable length with transaction type '9003'. This can occur one to many times. Every 560 bytes of notice text is put into a different detail record with transaction type = '9003'	See example
513	1	Indicates the beginning of a detail level record	+
514	4	Transaction type. 9003 is to report notice text for create notice and supplement notice transactions.	9003
518	2	Notice type (either 'EW' or 'MA')	MA
520	4	Notice number	0124
524	1	Status of notice being sent. Values can be: 'N' = New notice 'S' = Supplement Notice 'C' = Cancel Notice	N
525	2	Supplement Number.	00
527	3	Sequence number used to identify the sequence of notice text fields since there can be one or more of these fields.	001
530	560	Notice text.	See example
1090	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011311171850
Variable	1	Indicates the beginning of a summary record	=
Variable	4	Group record control number	0001
Variable	3	Always SUM	SUM
Variable	4	Indicates the total number of detail records within the group record	0001
Variable	1	Indicates the start of a trailer record	$
Variable	4	Indicates the total number of group records within the message.	0001
Variable	3	Always EOM	EOM
Variable	1	Always hex value of '9C' and indicates the end of the message.	æ

EWARN02 Assign Equipment Transaction Format

To show the definition of an EWARN02 equipment assignment transaction the following example message will be used.

#BNSF 0056EWARN021101130808RRDC /*0001186371+9001MA0124AGR
0000077535000007753 5DDUN2011011309394599=0001SUM0001$0001EOMæ

ENVELOPING OF INBOUND EWARN02 TRAIN 2 MESSAGE for assigning equipment:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	BNSF
6	4	Office within the railroad originating the message	
10	4	Message control number	0056
14	7	Message type	EWARN02
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101130808
31	4	Reporting mark of the destination station.	RRDC
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	6	Control Number	186371
51	1	Indicates the beginning of a detail level record	+
52	4	Transaction type. 9001 is assignment transaction	9001
56	2	Notice type (either ‘EW’ or ‘MA’)	MA
58	4	Notice number	0124
62	4	Equipment initial of the equipment being assigned	AGR
66	10	Equipment low number – lowest number in series of cars.	0000077535
76	10	Equipment high number – highest number in series of cars.	0000077535
86	4	The reporter of the assignment	BNSF

Start Position	Length	Field Description	Value in example message
90	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011309394599
106	1	Indicates the beginning of a summary record	=
108	4	Group record control number	0001
111	3	Always SUM	SUM
114	4	Indicates the total number of detail records within the group record	0001
118	1	Indicates the start of a trailer record	$
119	4	Indicates the total number of group records within the message.	0001
123	3	Always EOM	EOM
126	1	Always hex value of '9C' and indicates the end of the message. Not shown because the value is not printable.	

EWARN02 Report Inspection Transaction Format

To show the definition of an EWARN02 report inspection transaction the following example message will be used.

#BNSF 0056EWARN021101131003RRDC /*0001186371+9002MA0124AGR
000007753520110113MHBNSF2011011309394599=0001SUM0001$0001EOMæ

ENVELOPING OF INBOUND EWARN02 TRAIN 2 MESSAGE for reporting inspections:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	BNSF
6	4	Office within the railroad originating the message	
10	4	Message control number	0056
14	7	Message type	EWARN02
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101130808
31	4	Reporting mark of the destination station.	RRDC
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	6	Control Number	186371
51	1	Indicates the beginning of a detail level record	+
52	4	Transaction type. 9001 is assignment transaction	9002
56	2	Notice type (either 'EW' or 'MA')	MA
58	4	Notice number	0124
62	4	Equipment initial of the equipment being assigned	AGR
66	10	Equipment number of equipment having inspection reported	0000077535
76	8	Date that the inspection occurred.	20110113
84	2	Inspection code	MH

Start Position	Length	Field Description	Value in example message
86	4	Inspection reporter	BNSF
90	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011309394599
106	1	Indicates the beginning of a summary record	=
107	4	Group record control number	0001
111	3	Always SUM	SUM
114	4	Indicates the total number of detail records within the group record	0001
118	1	Indicates the start of a trailer record	$
119	4	Indicates the total number of group records within the message.	0001
123	3	Always EOM	EOM
126	1	Always hex value of '9C' and indicates the end of the message.	æ

EWARN03—Error Messages

These are sent for any business rule validation errors.

EWARN03 Assign Equipment Transaction Format

To show the definition of an EWARN03 equipment assignment transaction the following example message will be used.

#RRDC 0001EWARN031101131150DDUN
/*0001000138+9001MA0124TTGX000099572500009957 25DDUN201101131150413202=0001SUM00
01$0001EOMæ

ENVELOPING OF OUTBOUND EWARN03 TRAIN 2 MESSAGE for assigning equipment:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	RRDC
6	4	Office within the railroad originating the message	
10	4	Message control number	0001
14	7	Message type	EWARN03
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101131150
31	4	Reporting mark of the destination station.	DDUN
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	6	Control Number	000138
51	1	Indicates the beginning of a detail level record	+
52	4	Transaction type. 9001 is assignment transaction	9001
56	2	Notice type (either ‘EW’ or ‘MA’)	MA
58	4	Notice number	0124
62	4	Equipment initial of the equipment being assigned	TTGX

Start Position	Length	Field Description	Value in example message
66	10	Equipment low number – lowest number in series of cars.	0000995725
76	10	Equipment high number – highest number in series of cars.	0000995725
86	4	The reporter of the assignment	DDUN
90	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011311504132
106	2	The error code that identifies the reason for the rejection of the transaction.	02
108	1	Indicates the beginning of a summary record	=
110	4	Group record control number	0001
113	3	Always SUM	SUM
116	4	Indicates the total number of detail records within the group record	0001
120	1	Indicates the start of a trailer record	$
121	4	Indicates the total number of group records within the message.	0001
125	3	Always EOM	EOM
128	1	Always hex value of '9C' and indicates the end of the message. Not shown because the value is not printable.	

EWARN03 Report Inspection Transaction Format

To show the definition of an EWARN03 report inspection transaction the following example message will be used.

#RRDC 0001EWARN031101131227BNSF
/*0001030911+9002MA0063GNAX0000009147201101131227281404=0001SUM00
01$0001EOMæ

ENVELOPING OF OUTBOUND EWARN03 TRAIN 2 MESSAGE for reporting inspections:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	RRDC
6	4	Office within the railroad originating the message	
10	4	Message control number	0001
14	7	Message type	EWARN03
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101131227
31	4	Reporting mark of the destination station.	BNSF
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	6	Control Number	030911
51	1	Indicates the beginning of a detail level record	+
52	4	Transaction type. 9001 is assignment transaction	9002
56	2	Notice type (either 'EW' or 'MA')	MA
58	4	Notice number	0124
62	4	Equipment initial of the equipment being assigned	GNAX
66	10	Equipment number of equipment having inspection reported	0000009147
76	8	Date that the inspection occurred.	20110113
84	2	Inspection code	MR

Start Position	Length	Field Description	Value in example message
86	4	Inspection reporter	BNSF
90	16	Date and time of message transmission Format=YYYYMMDDHHMMSSMM	2011011312272814
106	2	The error code that identifies the reason for the rejection of the transaction.	04
108	1	Indicates the beginning of a summary record	=
109	4	Group record control number	0001
113	3	Always SUM	SUM
116	4	Indicates the total number of detail records within the group record	0001
120	1	Indicates the start of a trailer record	$
121	4	Indicates the total number of group records within the message.	0001
125	3	Always EOM	EOM
128	1	Always hex value of '9C' and indicates the end of the message.	æ

EWARN04—Acknowledgment (Received EWARN01)

To show the definition of an EWARN04 acknowledgment message the following example message will be used.

#RRDC 0001EWARN041101131501BNSF /*000111011314017227000120110113150133240001EOMæ

ENVELOPING OF OUTBOUND EWARN04 TRAIN 2 MESSAGE:

--->MESSAGE HEADER RECORD (one per message)
--->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	RRDC
6	4	Office within the railroad originating the message	
10	4	Message control number	0001
14	7	Message type	EWARN04
21	10	Date message prepared by customer Format=YYMMDDHHMM	1101131501
31	4	Reporting mark of the destination station.	BNSF
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	10	Inbound message date that the message was sent to Railinc	1101131401
55	4	Message sequence number of the original input message being acknowledged	7227
59	4	Total number of detail records within the original input message being acknowledged	0001
63	16	The date and time the original input message was received at Railinc.	2011011315013324
79	1	Indicates the start of a trailer record	$
80	4	Indicates the total number of group records within the message.	0001
84	3	Always EOM	EOM
87	1	Always hex value of '9C' and indicates the end of the message.	æ

EWARN05—Inbound Message Structure Error

To show the definition of an EWARN05 inbound error structure message the following example message will be used. This message is sent when an EWARN01 has message structure issues that cause the application to not be able to process the EWARN01 message.

#RRDC 0001EWARN051012301523BNSF
/*0001BNSF+20101230142301010001000 1G0302 R=0001SUM0000$0001EOMæ

ENVELOPING OF OUTBOUND EWARN05 TRAIN 2 MESSAGE:

--->MESSAGE HEADER RECORD (one per message)
| |-->GROUP LEVEL RECORD (one per message)
| | DETAIL RECORD(S) (one to many per message)
| |-->SUMMARY RECORD (one per message)
--->TRAILER RECORD

Start Position	Length	Field Description	Value in example message
1	1	Indicates the beginning of a message header	#
2	4	Reporting mark of the originator of the message	RRDC
6	4	Office within the railroad originating the message	
10	4	Message control number	0001
14	7	Message type	EWARN05
21	10	Date message prepared by customer Format=YYMMDDHHMM	1012301523
31	4	Reporting mark of the destination station.	BNSF
35	4	The office within the destination station	
39	1	Indicates the end of a message header	/
40	1	Indicates the beginning of a group level record	*
41	4	Group record control number	0001
45	4	Identifies the mark of the submitter of the message in error.	BNSF
49	1	Indicates the beginning of a detail level record	+
50	16	Date and time from the input EWARN01 message header Format=YYYYMMDDHHMMSSMM	2011011309394599
66	4	Message sequence number from the message header of the inbound EWARN01 message found in error.	0001
70	4	Group sequence number from the group level record of the inbound EWARN01 message found in error.	0001

Start Position	Length	Field Description	Value in example message
74	25	The following three fields can occur 1 to 5 times. 1. Identifies the level within the message of the field in error (1 character) 2. Identifies the field number within the record type that is in error. (2 characters) 3. Identifies the error code (2 characters)	G0302
99	1	Identifies if the entire transmission was rejected	R
100	1	Indicates the beginning of a summary record	=
101	4	Group record control number	0001
105	3	Always SUM	SUM
108	4	Indicates the total number of detail records within the group record	0001
112	1	Indicates the start of a trailer record	$
113	4	Indicates the total number of group records within the message.	0001
117	3	Always EOM	EOM
120	1	Always hex value of ‘9C’ and indicates the end of the message.	æ