Subject: **INFORMATION**: Revisions to Items 63-66 to Support Load Reporting by Rating Factor

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From: */s/ Original signed by M. Myint Lwin, P.E.*
M. Myint Lwin, P.E.
Director, Office of Bridge Technology

Reply to Attn of: HIBT-30

To: Directors of Field Services
Division Administrators
Federal Lands Highway Division Engineers

The purpose of this memorandum is to notify your office that we are revising the Recording and Coding Guide for the Structure, Inventory and Appraisal of the Nation's Bridges, (Coding Guide) report number; FHWA-PD-96-001, to allow the use of three additional codes for items 63; method used to determine operating rating, and item 65; method used to determine inventory rating. Currently, these items report Operating and Inventory Rating in metric tons using a MS loading using either the Load Factor (LF), Allowable Stress (AS), or the Load and Resistance Factor Rating (LRFR) methods. The three additional codes (6, 7 and 8) will allow for the reporting of loads by rating factor instead of tons for the three rating methods.

The revised Table for item 63 and 65 is shown below.

Code	Description
1	Load factor (LF) reported in metric tons using MS loading.
2	Allowable stress (AS) reported in metric tons using MS loading.
3	Load and Resistant Factor Rating (LRFR) reported in metric tons using MS loading.
4	Load testing.
5	No rating analysis performed.
6	Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.
7	Allowable Stress (AS) rating reported by rating factor (RF) method using MS18 loading.
8	Load and Resistance Factor Rating (LRFR) rating reported by rating factor (RF) method using HL-93 loadings.

Currently, the Coding Guide requires that only MS loadings be used to determine these two ratings and that the LF method should be the standard rating method used for rating. This is revised to also include HL-93 loadings when reporting by a rating factor using LRFR (code 8). The use of codes 6, 7 and 8 in items 63 and 65 is voluntary, however, we are encouraging the use of LRFR using HL-93 loadings (item 8) for all new or reconstructed structures that were designed by LRFD.

To report these rating factors to the FHWA items 64 and 66 have been revised to allow for both tons and rating factor input. The format for these data fields has already been defined as ##.#. The format for metric tons, therefore, will be coded as before. When reporting the load by rating factor method we will assume a different coding format of #.## to allow for reporting the rating factor in hundredths. As an example, if a rating factor were to be equal to 0.9 it would be coded as (090). Please see more examples that follow:

Examples:

Rating factor	Code
1.0	100
1.12	112
0.75	075

A rating factor (RF) of 1.00 using the LF or AS method with MS loadings would be the same as an MS18 loading. It is possible to convert a code 1 or 2 to a code 6 or 7 in item 63 or 65 by simply dividing the MS tons in item 64 or 66 by 32.4 and report that resultant as the rating factor in the corresponding items 64 or 66. An example is given below:

A structure that is rated with MS loadings using Load Factor (Code 1) is determined to have an operating rating capacity of 40.5 metric tons (MS-22.5). This metric tons value is divided by 32.4 metric tons (MS-18, the equivalent of a 36 ton HS-20 loading) to give a rating factor of 1.25.

40.5 / 32.4 = 1.25

This rating factor is then coded as a 6 in item 63 and coded as 125 in item 64. The same method can be used for converting item 63 from a 2 to a 7 or to convert item 65, Inventory Ratings, for items 1 to 6 and 2 to 7.

No such simple conversion is possible to convert code 3 to code 8 for items 63 or 65.

There are a couple of locations where the value of the MS load in metric tons is used in computations. In these cases the rating factor values for a code 6, 7 or 8 will be multipliedby 32.4 to get a value to be used in these formulas. The SI&A sheets have been revised to report the rating factor when used.

These changes will be available for use afterthe next bridge data submittal in April 2004. If you have any questions please feel free to contact Gary Moss (202) 366-4654 (gary.moss@fhwa.dot.gov) or Ann Shemaka (202) 366-1575 (ann.shemaka@fhwa.dot.gov) of my staff.

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