Rail-Highway Crossing Resource Allocation Procedure

USER'S GUIDE, THIRD EDITION

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Office of Safety Analysis
Washington, DC 20590

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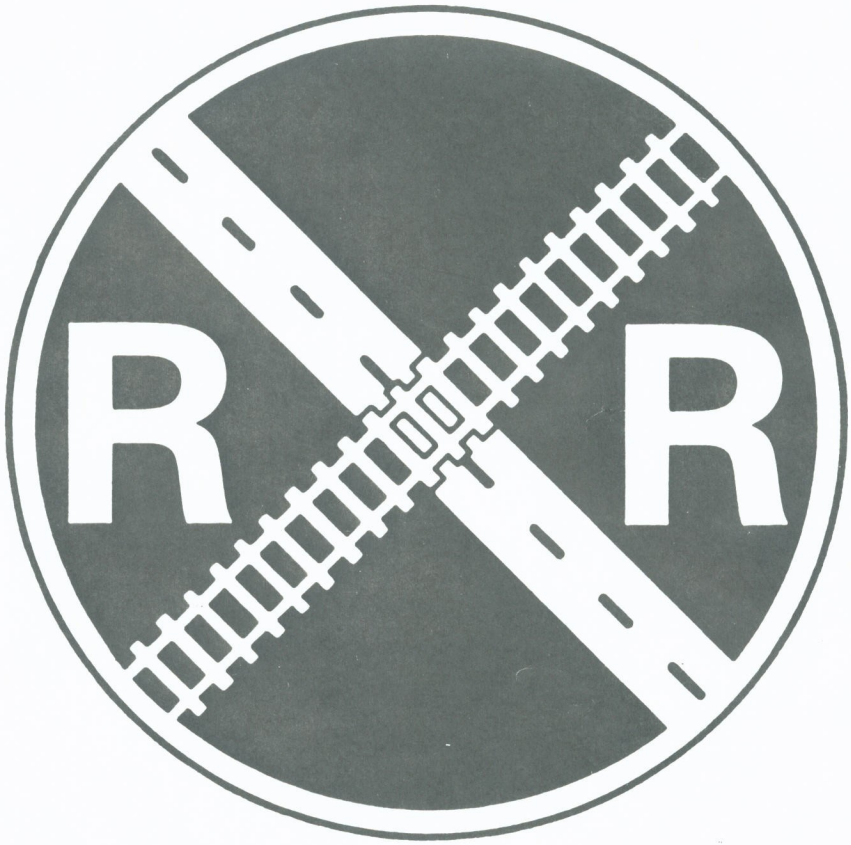

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16. Abstract

The Highway Safety Acts of 1973 and 1976, the Surface Transportation Acts of 1978 and 1982 and the Surface Transportation and Uniform Relocation Assistance Act of 1987 provide funding authorizations for individual states to improve safety at public rail-highway crossings. Safety improvements frequently consist of the installation of active motorist warning devices such as flashing lights or flashing lights with gates. To assist states and railroads in determining effective allocations of Federal funds for rail-highway crossing improvements, the U.S. Department of Transportation has developed the DOT Rail-Highway Crossing Resource Allocation Procedure. The procedure consists of the DOT accident and severity Prediction formulas, which predict the number of acidents and casualties at crossings, and the resource allocation model, which nominates crossings for improvement on a cost-effective basis and recommends the type of warning device to be installed. This guide provides interested users with complete information for application of the DOT Rail-Highway Crossing Allocation Procedure. This third edition of the guide incorporates recalibrated accident and severity prediction formulas using recent inventory and accident experience, and a more flexible and more complete software system.

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PREFACE

The Department of Transportation's (DOT) rail-highway crossing accident prediction formula and resource allocation model, described in this report, were developed at the Transportation Systems Center (TSC) under the sponsorship of the Federal Railroad Administration's (FRA) Office of Safety Analysis. When used together, these procedures provide an automated and systematic means of making preliminary cost-effective allocations of funds for improvement options among individual crossings.

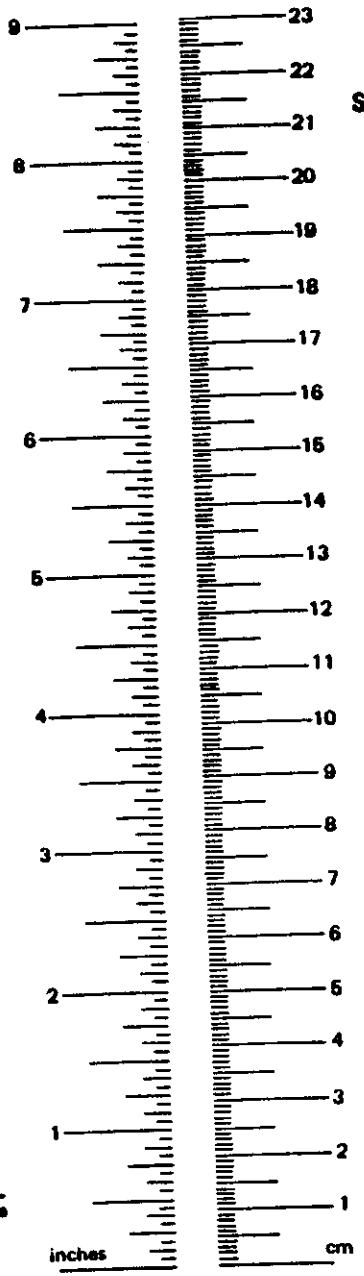
This user's guide provides complete information for application of the DOT procedures. Preparation of this third edition was the overall responsibility of Edwin H. Farr of TSC. Randhir Chhatwal of Bedford Research Inc., under contract to TSC, was responsible for development and description of computer programs required for application of the procedures.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

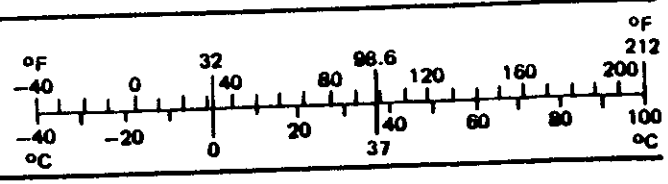
Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.95	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in. = 2.54 cm (exactly). For other exact conversions and more detail tables see NBS Misc. Publ. 286, Units of Weight and Measures. Price $2.25 SD Catalog No. C13 10 286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	36	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



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