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Procedures

NPR 751 Calculating Minimum Warning Time

Description

This document describes the procedure for calculating Minimum Warning Time (MWT).

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Introduction

Minimum Warning Time (MWT) is the minimum time required for a Lookout or an Automatic Track Warning System (ATWS) to warn workers on track about approaching rail traffic.

MWT must be calculated using three key components:

- the See time or Detect time:
  - a minimum of two seconds for the time it might take a Lookout to see approaching rail traffic (See time), or
  - a minimum of seven seconds for the time it might take an ATWS to detect approaching rail traffic (Detect time).
- the Move time is the time taken for all workers to move themselves and their equipment to a safe place, and
- the Safe time is the time all workers and equipment are in a safe place before rail traffic enters the worksite, a minimum of ten seconds.

> **Note**
>
> An additional five seconds warning time must be added to the MWT if using an additional Lookout.

Protection Officers must use an approved Minimum Warning Time Calculator, Sighting Distance Calculator or Sighting Distance Table when determining:

- the sighting distance required by a Lookout, or
- the distance an ATWS sensor must be placed from the worksite.

If a track speed or a MWT is not listed in the following table use the next highest value shown.

Procedures

NPR 751 Calculating Minimum Warning Time

Maximum track speed km/h	Sighting distance in metres to provide minimum warning time of:						
	15 sec	20 sec	25 sec	30 sec	35 sec	40 sec	45 sec
160	670	890	1115	1335	1560	1780	2000
150	625	835	1045	1250	1460	1670	1875
140	585	780	975	1170	1365	1560	1750
130	545	725	905	1085	1265	1445	1625
125	525	695	870	1045	1220	1390	1565
120	500	670	835	1000	1170	1335	1500
115	480	640	800	960	1120	1280	1440
110	460	615	765	920	1070	1225	1375
105	440	585	730	875	1025	1170	1315
100	420	560	695	835	975	1115	1250
95	400	530	660	795	925	1060	1190
90	375	500	625	750	875	1000	1125
85	355	475	595	710	830	945	1065
80	335	445	560	670	780	890	1000
70	295	390	490	585	685	780	875
60	250	335	420	500	585	670	750
50	210	280	350	420	490	560	625
40	170	225	280	335	390	445	500
30	125	170	210	250	295	335	375

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Procedures

NPR 751 Calculating Minimum Warning Time

Maximum track speed km/h	Sighting distance in metres to provide minimum warning time of:						
	15 sec	20 sec	25 sec	30 sec	35 sec	40 sec	45 sec
25	105	140	175	210	245	280	315
20	85	115	140	170	195	225	250
15	65	85	105	125	150	170	190

Calculating Minimum Warning Time

Protection Officer

1 Calculate the required:

- See Time or Detect Time, and
- Move Time, and
- Safe Time.

2 Add the three numbers to give the MWT.

3 Add five seconds to the MWT if an additional Lookout is used.

Calculating Minimum Sighting Distance

Protection Officer

1 Establish the maximum track speed for the affected portion of track.

2 An approved sighting distance calculator or sighting distance table to calculate the MSD.

Warning

As the duration of MWT increases, the accuracy of sighting distance becomes more critical.

Protection Officers must take care when estimating MSD.

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Procedures

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Related Documents

NPR 711 Using Lookouts

NPR 752 Using Automatic Track Warning Systems

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