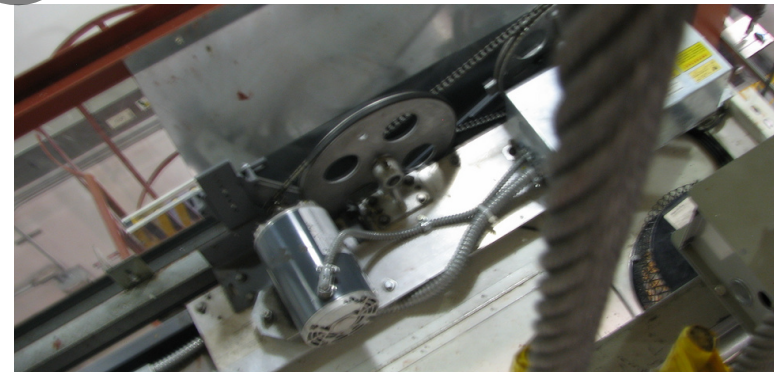
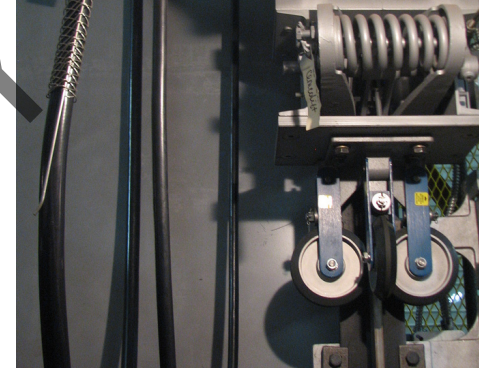


Instructor Guide



220: Elevator: Other Systems Module 2: Dumbwaiters



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PREVIEW ONLY

Elevator – Other Systems Dumbwaiters

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Icons Used In This Guide



REVIEW slides



ASK



CLASSROOM ACTIVITY



SMALL GROUP ACTIVITY



INDIVIDUAL ACTIVITY



WRITE



Multimedia



REFER participants to

Agenda

Topic #	Topic Title	Duration
1	Overview	10 minutes
2	Types & Components	20 minutes
3	Basic Operation	5 minutes
4	Drive Systems	10 minutes
5	Maintenance	15 minutes
6	Safety & Weight Capacity	5 minutes
7	Common Faults & Troubleshooting	10 minutes
8	Summary	15 minutes
	Total Time:	90 minutes

Elevator – Other Systems Dumbwaiters

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Overview

Purpose The purpose of this module is to:

Provide the participant with basic information about dumbwaiter systems as related to previous knowledge of basic elevator systems.

Objectives

At the end of this lesson, the transit elevator/escalator trainee will be able to:

- Identify safety procedures for dumbwaiters.
- Identify major components of dumbwaiters.
- Describe the basic operation of dumbwaiters.
- Identify troubleshooting procedures and common faults specific to dumbwaiters
- Identify maintenance requirements specific to dumbwaiters.
- Identify code requirements specific to dumb waiters.
- Describe weight limitations of dumbwaiters.

Materials

Mandatory Make sure you have the following

- PowerPoint Presentation
- Coursebook
- Quizzes
- Pencils

Optional

You may also want the following for optional activities:

- Chalk board with chalk, large paper with marker, etc.
- Internet connection
- Lab, simulator or out of service elevator
- Authority specific procedures if applicable
- ASME Code A17.1
- Time for a field visit if applicable

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 90 min This section: 10 min (5 slides) Section start time: _____ Section End Time: _____


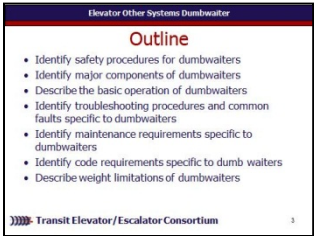
DO	SAY	Materials Needed
<div data-bbox="34 464 144 568" data-label="Image"> </div> <div data-bbox="150 499 618 542" data-label="Text"> <p>REVIEW introduction slides</p> </div> <div data-bbox="19 785 608 1242" data-label="Form"> <p>Instructor's Notes</p> <hr/><hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="672 421 1371 614" data-label="Text"> <p>In your own words: Welcome to the course on Elevator Other Systems Dumbwaiters. Advance</p> </div>	<div data-bbox="1497 464 1719 506" data-label="Text"> <p>✓ PPT slide 1</p> </div> <div data-bbox="1535 528 1854 763" data-label="Image"> </div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 90 min This section: 10 min (5 slides) Section start time: _____ Section End Time: _____




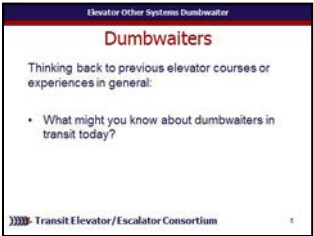
DO	SAY	Materials Needed
<div> REVIEW module objectives</div> <div><h3>Instructor's Notes</h3><div></div><div></div><div></div><div></div><div></div><div></div></div>	<p>In your own words:</p> <p>Today we will</p> <ul style="list-style-type: none">- Identify safety procedures for dumbwaiters.- Identify major components of dumbwaiters.- Describe the basic operation of dumbwaiters.- Identify troubleshooting procedures and common faults specific to dumbwaiters- Identify maintenance requirements specific to dumbwaiters.- Identify code requirements specific to dumb waiters.- Describe weight limitations of dumbwaiters.	<p>✓ PPT slide 3</p> <div></div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 90 min This section: 10 min (5 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div> ASK participants what they know about dumbwaiters</div> <div> SMALL GROUP ACTIVITY</div> <div> WRITE</div> <div>Instructor's Notes <hr/><hr/><hr/><hr/><hr/><hr/><hr/><hr/></div>	<p>In your own words:</p> <p>Thinking back to other courses or just in general, What might you know about dumbwaiters used in transit today?</p> <p><i>[Allow participants to think for a minute and perhaps discuss with a partner ideas as well as write down any ideas. Discuss participant responses and if possible list them on a chalk board or similar.]</i></p> <p><i>Advance</i></p>	<p>✓PPT slide 5</p> <div></div> <p>✓Large Paper or chalk board</p>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 80 min This section: 20 min (12 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="34 464 144 564"></div> <div data-bbox="170 492 428 528">REVIEW slides</div> <div data-bbox="34 592 144 692"></div> <div data-bbox="177 614 260 649">ASK</div> <div data-bbox="28 792 444 835">Instructor's Notes</div> <div data-bbox="28 892 608 1242"> <hr/><hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 421 1023 464">In your own words:</div> <div data-bbox="676 485 1101 1149"> <p>Door Frame Doors Geared Hoisting Machine Hatch Door Hoistway Hoistway light Motor Pit Pit light Rail Lubricator Rails Retiring Cam Safety Slack Cable Switch Travelling Cable</p> </div> <div data-bbox="685 1156 850 1192">Advance</div>	<div data-bbox="1497 471 1729 506">✓ PPT slide 7</div> <div data-bbox="1535 528 1854 763"> </div> <div data-bbox="1506 806 1903 885">✓ Large Paper or chalk board</div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 80 min This section: 20 min (12 slides) Section start time: _____ Section End Time: _____


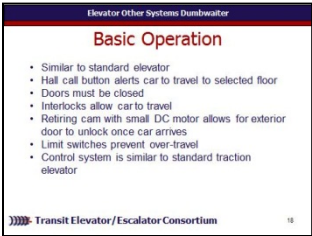
DO	SAY	Materials Needed
<div data-bbox="34 464 144 564" data-label="Image"> </div> <div data-bbox="170 492 409 528" data-label="Text"> <p>REVIEW slide</p> </div> <div data-bbox="28 792 444 835" data-label="Section-Header"> <h3>Instructor's Notes</h3> </div> <div data-bbox="28 892 608 1242" data-label="Form"> <hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 421 1023 464" data-label="Section-Header"> <h3>In your own words:</h3> </div> <div data-bbox="676 485 1439 706" data-label="Text"> <p>Here is a photo of a winding drum dumbwaiter system in WMATA. Buffers, while not listed with the previous components, are sometimes found in dumbwaiter systems, as seen in this photo as well.</p> </div> <div data-bbox="676 706 840 749" data-label="Text"> <p>Advance</p> </div>	<div data-bbox="1497 471 1748 506" data-label="Text"> <p>✓ PPT slide 14</p> </div> <div data-bbox="1535 528 1854 763" data-label="Image"> </div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 60 min This section: 5 min (2 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div> REVIEW slide</div> <div><h3>Instructor's Notes</h3><div></div><div></div><div></div><div></div><div></div><div></div></div>	<p>In your own words:</p> <p>Once again, the basic operation of a dumbwaiter is similar to a standard elevator.</p> <p>Advance Someone wishing to use the dumbwaiter must first press call button. This button alerts the car to travel to the selected floor.</p> <p>Advance Doors must be closed in order for the car to move. If doors are open on any floor, the car will not move even if the call button is pushed.</p> <p>Advance Once all doors are closed, interlocks are made allowing the car to travel.</p> <p>Advance Some units have a retiring cam which unlocks the exterior door once the car arrives at the designated floor. There is a small DC motor on top of the car that operates the retiring cam.</p> <p>Continued - Advance</p>	<p>✓ PPT slide 18</p> <div></div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 55 min This section: 10 min (5 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="34 464 144 564"></div> <div data-bbox="170 492 428 528"><p>REVIEW slides</p></div> <div data-bbox="28 792 444 835"><p>Instructor's Notes</p></div> <div data-bbox="28 892 608 1242"><hr/><hr/><hr/><hr/><hr/></div>	<p>In your own words:</p> <p>Here is a photo of a control panel and mainline disconnect in WMATA. You can see the control panel is just a smaller version of a standard electric traction controller.</p> <p>Advance</p> <p>Here is a photo from earlier of a motor in WMATA. You can see the motor is located in the hoistway, and in this case at the top of the hoistway.</p> <p>Advance</p>	<p>✓ PPT slides 21, 22</p> <div data-bbox="1541 528 1854 756"></div> <div data-bbox="1541 778 1854 1006"></div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 45 min This section: 15 min (10 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="34 464 144 564" data-label="Image"></div> <div data-bbox="170 492 409 528" data-label="Text"> <p>REVIEW slide</p> </div> <div data-bbox="28 792 444 835" data-label="Section-Header"> <h3>Instructor's Notes</h3> </div> <div data-bbox="28 892 608 1235" data-label="Form"> <hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 421 1023 464" data-label="Section-Header"> <h4>In your own words:</h4> </div> <div data-bbox="676 485 1439 1285" data-label="Text"> <p>Like other elevator systems, dumbwaiters must be maintained for proper function and effective use. Each transit authority keeps their own maintenance schedule and documentation for these systems. The following is a short review of the general maintenance procedures for dumbwaiters as well as an example maintenance schedule. However, this is only general and one should always follow authority specific maintenance schedules and procedures.</p> <p>To perform maintenance, first begin by making sure the opening and area around the dumbwaiter remains clear and this includes others as well. Bring the car to the top floor for service below, and bring the car to the lower floor for service and maintenance in the top of the hoistway.</p> </div> <div data-bbox="676 1285 840 1328" data-label="Section-Header"> <h4>Advance</h4> </div>	<div data-bbox="1497 471 1748 506" data-label="Text"> <p>✓ PPT slide 25</p> </div> <div data-bbox="1535 528 1854 763" data-label="Image"> </div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 45 min This section: 15 min (10 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="34 464 144 568" data-label="Image"> </div> <div data-bbox="170 492 428 528" data-label="Text"> <p>REVIEW slides</p> </div> <div data-bbox="28 792 444 839" data-label="Section-Header"> <h3>Instructor's Notes</h3> </div> <div data-bbox="28 892 614 1242" data-label="Form"> <hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 425 1023 464" data-label="Text"> <p>In your own words:</p> </div> <div data-bbox="676 485 1400 706" data-label="List-Group"> <ul style="list-style-type: none"> Advance Use non-conductive item Advance Remove cell phones, etc Advance Barricade and/or prevent access from other people and possible distractions Advance </div> <div data-bbox="676 749 1342 839" data-label="Text"> <p>Here is a photo of the hoistway makeup interlock procedure.</p> </div> <div data-bbox="676 842 840 882" data-label="Text"> <p>Advance</p> </div>	<div data-bbox="1497 471 1825 511" data-label="Text"> <p>✓ PPT slides 27, 28</p> </div> <div data-bbox="1541 528 1854 763" data-label="Image"> </div> <div data-bbox="1541 778 1854 1011" data-label="Image"> </div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 45 min This section: 15 min (10 slides) Section start time: _____ Section End Time: _____

DO



REVIEW slide



REFER participants to coursebook



WRITE

Instructor's Notes

SAY

In your own words:

Brakes – clearance and shoes should be check, pivot pins oiled, and cover cleaned.

Controller – clean including fuses and holder, check timers, check for proper sequence, and start contactors, check and tighten terminal connections.

Advance.

Materials Needed

✓ PPT slide 29

Elevator Other Systems Dumbwaiter		
Maintenance		
Component	Maintenance	Authority Specific Procedures
Brake	<ul style="list-style-type: none">• Clearance and shoes should be checked• Pivot pins oiled• Cover cleaned	
Controller	<ul style="list-style-type: none">• Clean including fuses and holder• Check timers• Proper sequence, and starter contactors• Check and tighten terminal connections	

Transit Elevator/ Escalator Consortium 29

- ✓ coursebook
- ✓ Authority Specific Procedures if possible

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 45 min This section: 15 min (10 slides) Section start time: _____ Section End Time: _____

DO



REVIEW slides



REFER participants to coursebook



WRITE

Instructor's Notes

SAY

In your own words:

In the hoistway, check car guides, traveling cable, and clean installation as needed.
Clean and check bearings in the motor hoistway.

Advance

Clean and ensure lighting is efficient in the pit.
Lubricate pivot points.
Check for rail lubrication ensuring the oil container on top of car is full and wick is saturated and operable.

Advance

Materials Needed

✓ PPT slides 32, 33

Elevator Other Systems Dumbwaiter		
Maintenance		
Component	Maintenance	Authority Specific Procedures
Hoistway	<ul style="list-style-type: none">Check car guides (rollers and shoes)Check traveling cable (hitch and loop) for tracking and wearClean installation as needed	
Motor Hoisting	<ul style="list-style-type: none">Clean and check bearings	

Transit Elevator/ Escalator Consortium

Elevator Other Systems Dumbwaiter		
Maintenance		
Component	Maintenance	Authority Specific Procedures
Pit	<ul style="list-style-type: none">Clean area and ensure lighting is efficient	
Pivot Points	<ul style="list-style-type: none">Lubricate	
Rails	<ul style="list-style-type: none">Check for lubrication, ensure oil container on top of car is full and wick is saturated and operable	

Transit Elevator/ Escalator Consortium

- ✓ coursebook
- ✓ Authority Specific Procedures if possible

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 25 min This section: 10 min (6 slides) Section start time: _____ Section End Time: _____


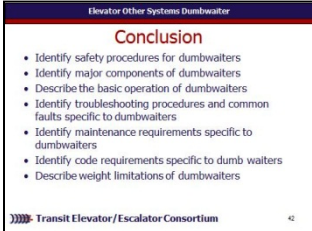
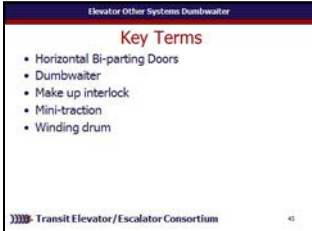
DO	SAY	Materials Needed
<div data-bbox="34 468 139 574" data-label="Image"></div> <div data-bbox="177 502 260 542" data-label="Text">ASK</div> <div data-bbox="28 792 444 839" data-label="Section-Header">Instructor's Notes</div> <div data-bbox="28 896 610 1239" data-label="Form"> <hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 425 1420 778" data-label="Text"> <p>In your own words: Describe the process and safety precautions for making up a dumbwaiter hoistway interlock.</p> <p>Call on participants for answer Advance once given the correct answer Answer: review next two slides Advance</p> </div> <div data-bbox="676 825 1110 911" data-label="Text"> <p>[Review previous slide.] Advance</p> </div> <div data-bbox="676 959 1110 1045" data-label="Text"> <p>[Review previous slide.] Advance</p> </div>	<div data-bbox="1497 471 1889 511" data-label="Text">✓PPT slides 38, 39, 40</div> <div data-bbox="1541 528 1854 759" data-label="Image"></div> <div data-bbox="1541 778 1854 1009" data-label="Image"></div> <div data-bbox="1541 1028 1854 1259" data-label="Image"></div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 15 min This section: 15 min (3 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div></div> <div>CLASSROOM ACTIVITY</div> <div>Instructor's Notes </div>	<p>In your own words: <i>[Read slide. For each objective, briefly review what was learned in this module or ask participants to share what they have learned for each learning objective and briefly discuss as a class.]</i> Advance.</p> <p>Lets take a look at some of the key words we have defined as moved through this module. <i>Read slide. Discuss definitions as a group.</i> Advance.</p>	<p>✓PPT slides 42, 43</p> <div></div> <div></div>

Elevator – Other Systems Dumbwaiters

Instructor's Guide



Module Length: 90 min Time remaining: 15 min This section: 15 min (3 slides) Section start time: _____ Section End Time: _____

DO	SAY	Materials Needed
<div data-bbox="34 459 146 571"></div> <div data-bbox="177 488 423 571">CLASSROOM ACTIVITY</div> <div data-bbox="34 602 146 714"></div> <div data-bbox="170 631 562 668">INDIVIDUAL ACTIVITY</div> <div data-bbox="30 792 444 839">Instructor's Notes</div> <div data-bbox="30 896 610 1239"> <hr/><hr/><hr/><hr/><hr/> </div>	<div data-bbox="676 425 1023 468">In your own words:</div> <div data-bbox="676 559 1033 602"><i>Administer quizzes.</i></div>	<div data-bbox="1497 474 1761 602"> <ul style="list-style-type: none"> ✓ PPT slides 44 ✓ Quizzes ✓ Pencils </div> <div data-bbox="1510 631 1823 865"> </div>