

Chapter 1 Purpose of Bridges and Trestles

Provide Openings 1; Conserve Ground Space 2; Span Gaps 3; Handle Locomotives and Cars 3; Connect to Car Floats 4; Serve Model Need 5

Chapter 2 Elementary Bridge Engineering

Terms 7; Stress 7; Cantilever Arm 9; Determinate/Indeterminate 9; Cooper's Loading 9; Highway Loading 10; Lateral and Sway Bracing 10

Chapter 3 Types of Bridges Bridge, Trestle, Viaduct, Culvert 11; Deck, Through 11; Material 11, Movable, Fixed 11; Riveted, Welded, Pin Connected 11; Simple, Continuous, Cantilever, Suspension 12; Beak, Plate Girder, Truss 13

Chapter 4 Selection of Bridge Type

Span, Age 15; Terrain 15; Waterway 16; Traffic 16

Chapter 5 Culverts

Pipe 17; Box 17; Arch 18; Modeling 18; Layout Application 19

Chapter 6 Abutments, Piers, Shoes, Pedestals

Abutment 20, Modeling Abutment 21; Pier 24; Modeling Pier 27; Pedestal, Shoe 28

Chapter 7 Bridge Floors

Open Floor 29; Modeling Open Floor 30; Ballasted Floor 31; Modeling Ballasted Floor 32; Minimum-Clearance Floor 32; Highway Floor 32; Track Power 33

Chapter 8 Beam Bridges

Timber 34; Steel 34; Concrete 35

Chapter 9 Plate-Girder Bridges

Deck 38; Through 41; On Curve 45

Chapter 10 Steel Truss Bridges

Types 47; Truss Members 49; Modeling Truss Members 51; Assembling 54; Low Truss 56; Through Truss 57; Deck Truss 64

Chapter 11 Timber Bridges

Arch 69; Truss 70; Covered 73

Chapter 12 Arch Bridges

Nomenclature 78; Arch Shape 79; Stone 79; Concrete 81; Open Spandrel 84; Steel 86;

Chapter 13 Movable Bridges

Turntable 90; Swing 91; Bascule 101; Vertical Lift 113; Rolling 119; Floating 120; Transporter 121; Transfer 121

Chapter 14 Long-Span Bridges

Cantilever 123; Continuous 127; Suspension 128

Chapter 15 Trestles

Timber 130; Steel 136; Concrete 138

Chapter 16 Bridge Miscellany

Refuge 140; Mirror 140; Telltale 141; Signs 142; Draw Bridge Protection 144; Auxiliary Crossing 145; Switches on Bridge 145; Navigation Light 146; Color 147; Comedy of Errors 147