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Nota di contenuto	Failed Bridges Case Studies, Causes and Consequences; Foreword; Contents; Preface to the English edition 2010; Preface to the German edition 2000; 1 Introduction; 1.1 Retrospect; 1.2 Aim; 1.3 Structure; 1.3.1 General information about the tables; 1.3.2 Structures included; 1.3.3 Causes considered; 1.3.4 Sections of the book; 1.3.5 Sources used; 1.3.6 Abbreviations; 1.3.7 Overview of failure cases; 1.4 Earlier publications on the failure of load-bearing structures; 1.5 Estimated numbers of bridges in Germany and USA; 2 Failure of bridges, general information; 3 Failure during construction 3.1 General observations3.2 Buckling of compression members in truss bridges; 3.3 Deflection of steel compression struts or chords out of the plane of a truss or beam - a trough bridge problem; 3.4 Failure of steel bridges with box girders; 3.5 Failure of cantilever prestressed concrete bridge beams; 3.6 Failure of bridges constructed by incremental launching [54]; 3.7 Collapse of the Frankenthal Rhine bridge; 3.8 Damage during construction of the Heidingsfeld motorway bridge; 3.9 Failure during demolition or reconstruction; 3.10 Remarks on cantilever erection

3.11 Remarks on the collapse of a steel truss bridge over the Mississippi (Case 3.103)4 Failure in service without external action; 4.1 General observations; 4.2 Remarks on the Nienburg "cable"-stayed bridge over the River Saale, Case 4.87; 4.3 Failure of suspension bridges; 4.4 Collapse of the Dee Bridge; 4.5 Collapse due to wind action, excluding suspension bridges; 4.6 Collapse through overload, excluding suspension bridges; 4.7 Collapse of the Monchenstein Bridge (Case 4.28); 4.8 Collapse or damage due to material defects: brittle fracture
4.9 Damage resulting from fatigue or bad maintenance4.10 Collapse of the Elbow Grade Bridge (Case 4.48); 4.11 Collapse of the Connecticut Turnpike Bridge over the Mianus River and the Sungsu truss bridge over the Han River in Seoul; 5 Failure due to impact of ship collision; 5.1 General observations; 5.2 Conclusions from Table 5; 6 Failure due to impact from traffic under the bridge; 6.1 General observations; 6.2 Impact due to failure to observe the loading height; 6.3 Collision with bridge supports by derailed trains or vehicles leaving the road
7 Failure due to impact from traffic on the bridge8 Failure due to flooding, ice floes, floating timber and hurricane; 9 Failure due to fire or explosion; 10 Failure due to seismic activity; 11 Failure of falsework; 11.1 General observations; 11.2 Failure due to inadequate lateral stiffness; 11.2.1 Inadequate ensuring of the assumed effective length of supports; 11.2.2 Inadequate lateral bracing of compressed upper flanges of temporary beams; 11.2.3 Inadequate bracing in the area of screw jack spindles; 11.2.4 A special case; 11.3 Failure due to poor foundations
11.4 Failure due to inadequate coordination between design and construction

Sommario/riassunto

When bridges fail, often with loss of human life, those involved may be unwilling to speak openly about the cause. Yet it is possible to learn from mistakes. The lessons gained lead to greater safety and are a source of innovation. This book contains a systematic, unprecedented overview of more than 500 bridge failures assigned to the time of their occurrence in the bridges' life cycle and to the releasing events. Primary causes are identified. Many of the cases investigated are published here for the first time and previous interpretations are shown to be incomplete or incorrect. A catalo
