

# Understanding Minor Piece Endgames



Karsten Müller and Yakov Konoval

# **Understanding Minor Piece Endgames**

**Karsten Müller**

and

**Yakov Konoval**

**Foreword by Jacob Aagaard**



**2018**

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Understanding Minor Piece Endgames  
by Karsten Müller and Yakov Konoval

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# Bibliography

*Fundamental Chess Endings*, Karsten Müller and Frank Lamprecht, Gambit 2001

*How to Play Chess Endgames*, Karsten Müller and Wolfgang Pajeken, Gambit 2008

*Understanding Rook Endgames*, Karsten Müller and Yakov Konoval, Gambit 2016

*Understanding Chess Endgames*, John Nunn, Gambit 2009

*Nunn's Chess Endings*, John Nunn, Gambit 2010

*Dvoretsky's Endgame Manual*, Mark Dvoretsky, Russell Enterprises 2003, 4th edition 2014

*Encyclopedia of Chess Endings* (ECE v. 5) Yuri Averbakh, Nicosia 1993

## DVDs

*Chess Endgames 1-14*, Karsten Müller, ChessBase Fritztrainer DVDs, ChessBase 2006-2013

## Periodicals and Magazines

*Chess Informant*

*New in Chess Magazine*

*ChessBase Magazine* (CBM) and CBM Blog at ChessBase.com

*The Week in Chess*

*Chess Today*

*Endgame Corner* at ChessCafe.com

## Databases and Programs

ChessBase MEGABASE 2015

ChessBase Let's Check

Harold van der Heijden's Endgame Study Database

Stockfish

Konoval's five-, six- and seven-piece Tablebases

Lomonosov's seven-piece Tablebase

# Preface

Knowing the abilities and limitations of the minor pieces is very valuable for mastering the secrets of the royal game, and this can be studied best in the endgame. There are already many books dealing with this issue. Why have we added another one to the collection? Computer technology continues to move forward and it advances endgame theory at the same time. Yakov Konoval and Marc Bourzutschky have created seven-piece tablebases and so the definitive verdict on all such positions and optimal moves are known with certainty. Now seven-piece Lomonosov tablebases are available. They allow any given position to be evaluated.

In addition, Marc and Yakov have developed software which allows automatic access to many interesting things such as long wins, *zugzwang*, typical positions, and so on. Thanks to this software, there are many new discoveries. So Yakov contacted Karsten with the idea of writing a book on the new insights.

This book follows a dual philosophy, like our previous work, *Understanding Rook Endgames*. We deal with seven-piece endings in some detail. They are often so deep that pre-tablebase analysis almost always contains errors. Many new discoveries are revealed here. We have also added the important five- and six-piece endings a club player should know. But to really understand minor piece endings, these theoretical positions are of course not enough. We have therefore added subchapters on the principles of each material constellation. Finally we want to thank Hanon W. Russell for his cooperation, Jacob Aagaard for his foreword, Guy Haworth for checking a position with the tablebase generator FinalGen, and Vladimir Makhnychev and Victor Zakharov for allowing access to the Lomonosov Tablebases.

Karsten Müller and Yakov Konoval  
August 2018

# Foreword

While we are still physical beings, located in only one place at any given time, our minds have gone global thanks to technology. I have worked with Karsten Müller in some form for more than a decade, exchanging views on endgames and each other's books, asking for advice. I consider him a friend. Yet, we have only spoken in person once, more than a decade ago. (We also played in the same tournament at least once, but I only know this because of ChessBase technology!) I was recording a video for ChessBase in Hamburg, and through a friend of a friend, asked Karsten to join me for dinner. But in terms of how I look at chess, he is one of the most influential people in my life, both because of his outstanding books and because of the hundreds of emails we have exchanged over the years.

This same technology lies at the roots of this new effort from the German master of the endgame. Every new book written by Karsten is an event for me and I was especially impressed by his latest effort, *Understanding Rook Endgames*, also co-written with Yakov Konoval. The combination of technological information and interpretation of this information by an expert in his field is continued in this book.

Having had the pleasure to preview this book, I can tell you that you are in for a treat. Careful study of this book will benefit your chess immensely, as well as improve your life quality. Now you have made this wise investment, do not forget to read the book cover to cover.

Jacob Aagaard  
Glasgow  
March 2018

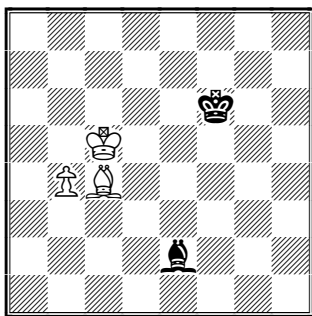
# Chapter 4

## Same-Color Bishop Endgames

(a) The defending king tries to get in front of the pawn

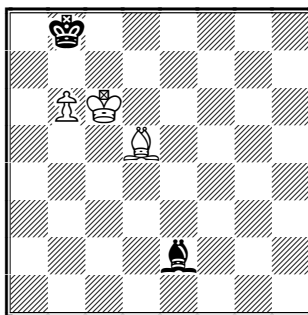
Here the typical fighting techniques are bodychecks and the defending bishop should be able to go to both diagonals needed to stop the pawn. If the defending king can reach a square in front of the pawn which the bishop cannot control, then the draw is clear:

**04.01 Petersons – Ljavidansky**  
Kiev 1964



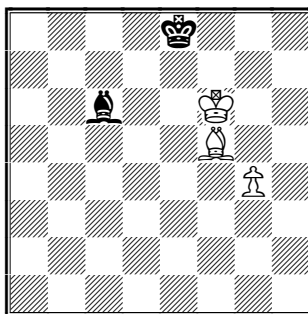
**72...♙f3?** 72...♙h5 73.b5  
(73.♙d6 ♗e8! 74.♙d5 ♗b5!=)  
73...♙e7! 74.b6 ♙d8! 75.♙e6 ♙f3  
76.♙d5 (76.♙d6 ♗b7! 77.♙d5 ♙c8!=)  
76...♙e2 77.♙d6 ♙c8 78.♙c6 ♙b8 (D)

Such configurations are always drawn of course. **73.♙d6** This bodycheck keeps Black's king away. **73...♙e4 74.b5 ♙f3 75.b6 ♙b7 76.♙c7 ♙a8 77.♙b5 ♙e7 78.♙c6 1-0**



When the bishop can control the blockading square, it is different:

**04.02 Shyam – Vaibhav**  
New Delhi 2010

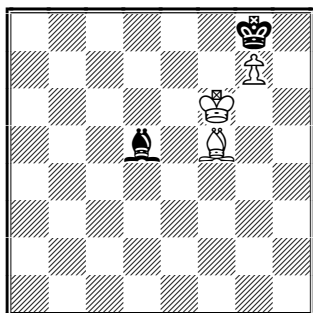


**59.♙g7?** Now the pawn cannot cross g6. 59.g5! wins as g8 can be controlled by the bishop: 59...♙f8 60.g6 ♗d5 61.g7+ ♙g8 (D)

Next White's king goes to h6 and then to h8, which wins, e.g., 62.♙g6 ♗c4 63.♙e8 ♗d5 64.♙g6 ♗c4 65.♙h6



## Same-Color Bishop Endgames



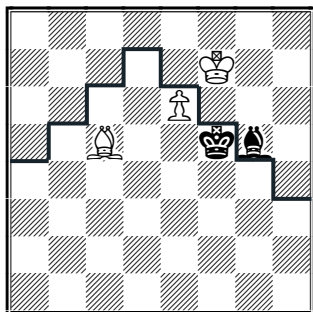
**1. ♖e7 ♗e3 2. ♗f6 ♗c5!** = If the passed pawn has advanced beyond the line, then the attacker wins as one of the diagonals is shorter than 4 squares and therefore not long enough. There are two exceptions to this rule, both given by Centurini in 1856. The next two positions are both drawn, regardless of who moves first:

♗d3 66. ♗c6 ♗c4 67. ♗e4 ♖f7 68. ♖h7 ♖f6 69. ♖h8 ♗b3 70. ♗h7 ♗c4 71. ♗g8 ♗d3 72. ♗d5+- 59... ♖e7 60. ♗g6 ♗d7 61. ♗g5 ♗b5 62. ♗f7 ♗c6 63. ♖g8 ♗e4 64. ♗b3 ♗g6 65. ♖g7 ♗e4 66. ♖h8 ♖f8 67. ♗g8 ♗g6 68. ♗h7 ♗f7 69. ♗e4 ♗h5 70. ♖h7 ♗e8 71. ♗d5 ♗b5 72. ♗e4 ♗e8 73. ♗g6 ♗b5 74. ♖h8 ♗c6 75. ♖h7 ♗b5 76. ♖h6 ♗c6 77. ♗d3 ♗e8 78. ♗c4 ♖e7 79. ♗e2 ♖f8 80. ♗f3 ♖g8 81. ♗d5+ ♖f8 82. ♗f3 ♖g8 83. ♗h5 ♗xh5 1/2-1/2

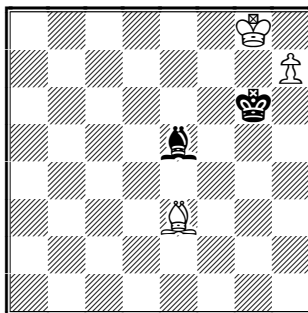
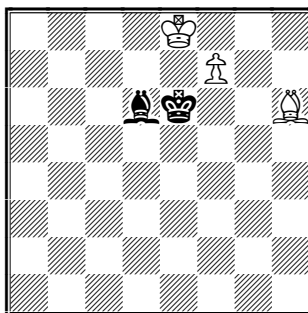
(b) The defending king tries to go behind the pawn

This is the other principal defensive method, which was worked out in detail by Centurini:

### 04.03 Centurini's Rule 1856

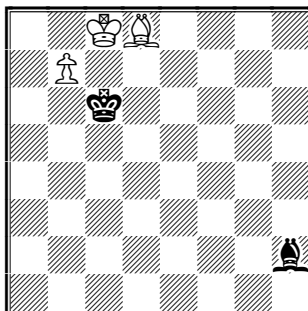


Black's king controls the important f6-square and Black cannot fall into *zugzwang* as both diagonals are longer than three squares:



If near the edge, the attacker must be careful:

### 04.04 Centurini 1856

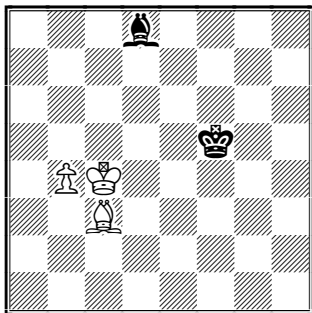


## Understanding Minor Piece Endgames

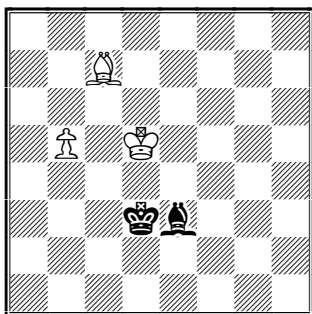
**1. ♖h4 ♜b6 2. ♖f2+ ♜a6 3. ♖c5!** An important point to force Black's bishop into the open to win a tempo later. 3...♖d4?! is met by 3...♖d6!? 4. ♖f6 ♜b6 5. ♖d8+ ♜c6 6. ♖e7 ♖h2 and White has made no progress. **3... ♖g3 4. ♖e7 ♜b6 5. ♖d8+ ♜c6 6. ♖h4 ♖h2 7. ♖f2 ♜b5 8. ♖a7 ♜c6 9. ♖b8 ♖g1 10. ♖e5 ♖a7 11. ♖d4+-**

So the defending king should often head for the rear:

**04.05 Capablanca – Janowsky**  
New York 1916



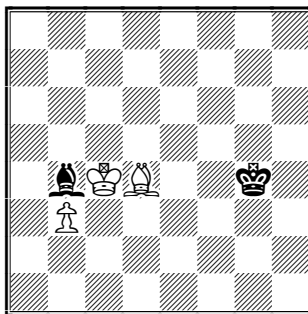
Janowski resigned but the position is drawn: **83. ♜d5 ♜f4!! 84. ♖d4 ♜f3! 85. b5 ♜e2! 86. ♜c6 ♜d3 87. ♖b6 ♖g5 88. ♖c7 ♖e3 89. ♜d5!**



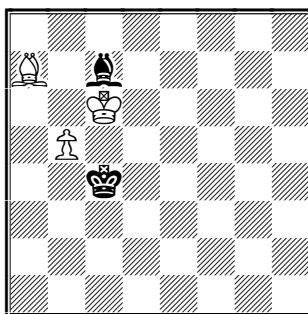
“The most dangerous continuation, as pointed out by Issler.” (Dvoretsky) **89... ♖d2!!** 89...♜c3? 90. ♖d6 ♖b6 (90...♜b3 91. ♖c5 ♜a4 92. ♜c6+-)

91. ♜c6+- (Dvoretsky) **90. ♖d8 ♖e3! 91. ♖c7 91. ♖e7 ♖b6! 92. ♜c6 ♖a5! 93. ♖d6 ♜c4=** (Dvoretsky) **91... ♖d2! 92. ♜c6 ♖e3 93. ♜b7! ♜c4 94. ♜a6 ♜b3!! 95. ♖b6 ♖g5 96. ♖f2 ♖d8 97. ♖e1 ♜a4=** (Averbakh)

Fischer knew all the details:  
**04.06 Taimanov – Fischer**  
Buenos Aires 1960



**79... ♖a5 79... ♖d6? 80. ♖c5 ♖c7 81. b4 ♜f3 82. ♜d5 ♜e2 83. ♜c6 ♖d8 84. ♜d7 ♖h4 85. b5 ♜d3 86. b6 ♜c4 87. b7 ♖g3 88. ♖d6+-** **80. ♖c3 ♖d8 81. b4 ♜f4 82. b5 82. ♜d5 ♜e3= 82... ♜e4 83. ♖d4 ♖c7 84. ♜c5 ♜d3** The right direction, to get behind the pawn, which reaches Centurini's drawing set-up as both stopping diagonals are longer than three squares. **85. ♜c6 ♜c4 86. ♖b6 ♖f4 87. ♖a7 ♖c7 ½-½**



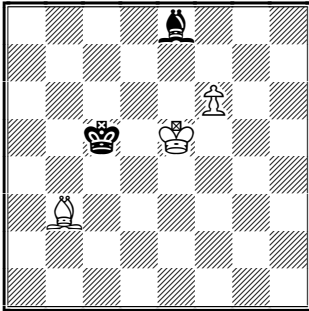
## Same-Color Bishop Endgames

After the game, Taimanov inquired, “Bobby how did you manage to save the situation and do it so quickly?” “I didn’t have to do any thinking. Seven years ago, your magazine, *Shakhmaty v SSSR*, printed a detailed analysis of this endgame [by Averbakh] and I just knew all the variations,” was the astonishing reply of the American genius.

So the attacker must keep the defending king away, if possible:

### 04.07 Mariotti – Larsen

Las Palmas 1978



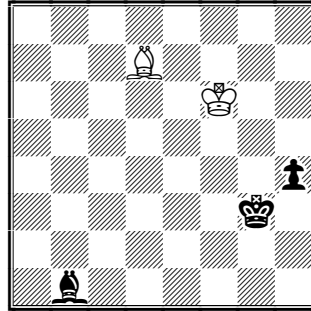
**82. ♖f5?** After 82. ♖e6? ♖d4 83. ♖e7 ♖e5=, Black reaches Centurini’s draw. First the bishop must cross with 82. ♗g8 ♗h5 and now the king can come: 83. ♖e6 ♖d4 84. ♗f7 ♗g4+ 85. ♖d6 ♗d1 (85... ♖e4 86. ♗g6+-) 86. ♗e8 ♗b3 87. ♗d7 ♗f7 88. ♖e7 ♗h5 89. ♗e8+- **82... ♗d6** **83. ♗g5 ♖e5** 84. ♗c2 ♗f7 85. ♗f5 ♗c4 86. ♗d3 ♗f7 87. ♗c2 ♗c4 **88. ♗g6 ♖f4** 89. ♗a4 ♗d5 90. ♗e8 ♗c4 ½-½

### (c) A rook pawn

The rook pawn is a bit special, so we deal with it separately.

### (c1) The bishop controls the queening square

Centurini’s rule is valid here as well. But there is also another defense available:



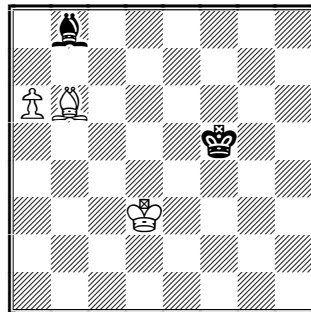
**71. ♖g5?** The Centurini set-up is lost as the stopping diagonal f1-h3 is only three squares long. Against a rook pawn, 71. ♖e5! ♗g6 72. ♖d4! ♗h5 73. ♖e3 ♗g4 74. ♗xg4 ♖xg4 75. ♖f2 draws. **71... ♗d3** **72. ♗e6 ♗f1** **73. ♗d7 ♗h3** 74. ♗b5 ♗g4 75. ♗f1 ♗f3 White is in *zugzwang* as the stopping diagonal is too short. **76. ♖f5 ♗g2** 0-1

### (c2) The bishop does not control the queening square

Here new motifs appear, as sometimes the defending bishop is not needed, and sometimes even miracles can occur:

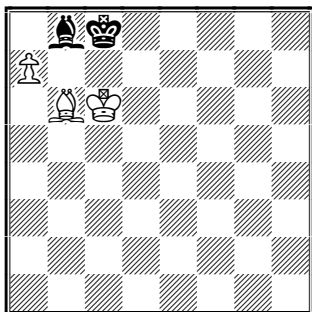
### 04.09 Dreev – Onischuk

Cap d’Agde 2002



**52... ♖e6!** **53. ♖c4 ♖d6?** 53... ♖d7! 54. ♖b5 ♖c8! 55. ♖c6 Black is in *zugzwang*, but there is an amazing way out: 55... ♗h2 56. a7 ♗b8!! =

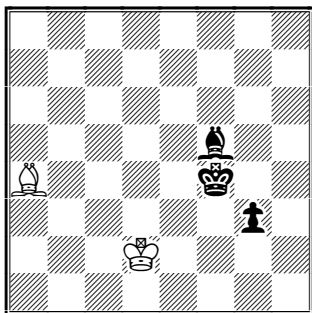
## Understanding Minor Piece Endgames



Promotions to a queen or rook lead to stalemate and under-promotions to drawn pawnless endings. **54. ♖b5! ♜d7 55. ♜c5?** 55. ♗g1 ♜c7 56. ♗f2+- and Black is in *zugzwang* **55... ♗d6+** **56. ♖b5 ♜c8 57. ♜c6 ♜b8** Black does not need the bishop anymore. **58. ♜×d6 ♜a8** ½-½

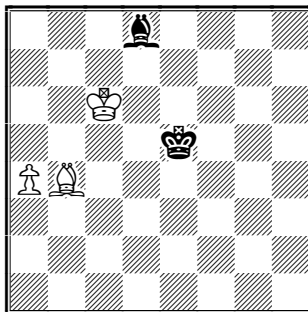
### Exercises

**E04.01 Sydor – Pokojowczyk**  
Bydgoszcz 1976



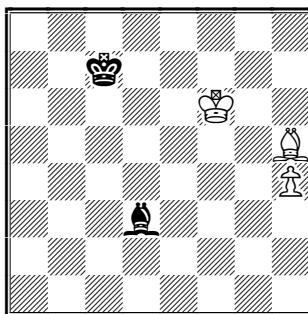
*How to defend?*

**E04.02 Thomas – Maróczy**  
Weston 1922



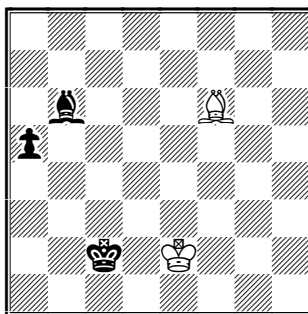
*How to break Black's blockade?*

**E04.03 Eliskases – Bogoljubow**  
Germany 1939



*How did Bogoljubow defend?*

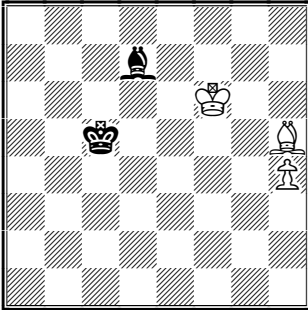
**E04.04 Burke – Cabanas**  
Vancouver 1984



*How to defend?*

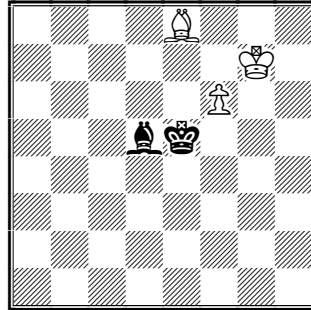
## Same-Color Bishop Endgames

**E04.05** Voitsekhovskiy – Zagrebelny  
Kstovo 1998



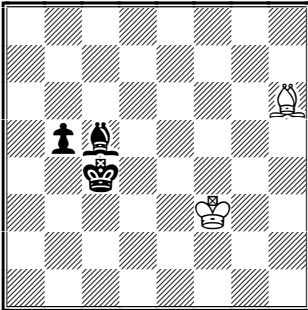
*White has two moves to win.  
Find one of them!*

**E04.08** Fressinet – Smeets  
Germany 2012



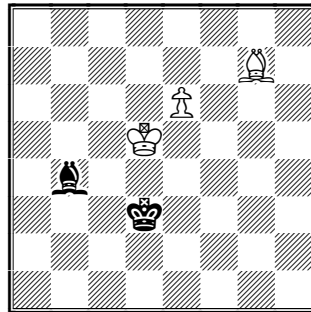
*Black to move and draw*

**E04.06** Forster – Smokina  
Queenstown 2009



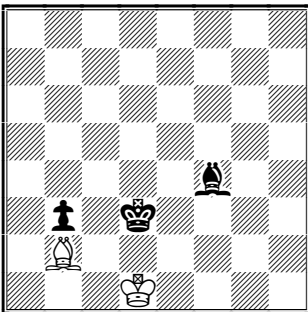
*What is Black's highest priority?*

**E04.09** Forintos – Liberzon  
Moscow 1971



*White to move and win*

**E04.07** Nevednichy – Saric  
Kozloduy 2013



*Black to move and win*

**(4.2)** ♖+2♗s vs. ♖

This is usually won. But problems can arise with a wrong rook pawn or when the pawns can be securely blockaded by the king.

**(a) Connected passed pawns**

They usually win, but it is important to advance them in the right way. In the first example, we start a bit earlier: