CYRUS LAKDAWALA

TACTICAL TRAINING
IN THE ENDGAME

About the Author

Cyrus Lakdawala is an International Master, a former National Open and American Open Champion, and a six-time State Champion. He has been teaching chess for over 40 years, and coaches some of the top junior players in the U.S.

Also by the Author:
1...b6: Move by Move
1...d6: Move by Move
A Ferocious Opening Repertoire
Anti-Sicilians: Move by Move
Bird's Opening: Move by Move
Botvinnik: Move by Move
Capablanca: Move by Move
Carlsen: Move by Move
Caruana: Move by Move
First Steps: the Modern
Fischer: Move by Move
Korchnoi: Move by Move
Kramnik: Move by Move
Larsen: Move by Move
Opening Repertoire: ...c6
Opening Repertoire: Modern Defence
Opening Repertoire: The Sveshnikov
Petroff Defence: Move by Move
Play the London System
The Alekhine Defence: Move by Move
The Caro-Kann: Move by Move
The Classical French: Move by Move
The Colle: Move by Move
The Four Knights: Move by Move
The Modern Defence: Move by Move
The Nimzo-Larsen Attack: Move by Move
The Scandinavian: Move by Move
The Slav: Move by Move
The Trompowsky Attack: Move by Move

Contents

Introduction

"Simplicity is the ultimate sophistication" - Lao Tzu

The premise of Isaac Asimov's classic I Robot novel is: How does a detective find a murderer among a community of machines who all look and act exactly alike? Many of us feel we are the novel's detective Del Spooner (played by Will Smith in the movie version), when attempting to sort out endgame tactical themes, which some students tell me look alarmingly alike. So numerous are they, that they sometimes feel like an eternally expanding universe. The secret is to transform the randomness into clearly recognizable patterns, which is the goal of this book. Each game fragment, endgame study or mating problem in the book has locked within it a mystery. The purpose of this book is to understand the process of how to reveal this mystery. Are tactics and combinations the same? The answer is yes and the only difference is degree, where a tactic is basically short range, while a combination is longer. Beginning players equate combinations with magic, when in reality the combination is simply a correct identification of a hidden and classifiable geometric theme. There are three necessary factors in a combination:

1) Our combination always begins with abstraction, the core idea. The goal is to depetrify the rigid mind of orthodoxy and allow imagination to run free. At the same time, we must be careful, since the one fact which imagination loathes is: the chess board is subject to limits. Our idea, no matter how brilliant or how creative, must in the end work

2) The idea's implementation, the hard numbers of calculation. We must take number 1 on the list and turn these pockets of reductive abstraction into flesh, blood and bone reality. In this phase clarity, accuracy and depth of calculation are essential. For example, in a king and pawn ending there is no room for even a tiny rounding error of a single decimal. In this book there are some calculation-dense studies - especially king and pawn endings - where there are no tactics in them. Then why did I place them in the book? Because calculation is a subset of tactics and we should not consider them as separate entities.

3) We use a mix of logic and intuition to come to the conclusion, the assessment of the aftermath. You can envision and calculate your combination perfectly and then still bungle the assessment, where your winning position may in reality be a losing or drawing position.

If we stumble on any of the three, our would-be combination may short circuit. Our equation is: abstraction + mathematics + correct assessment = effective combination.

In this book, I took a different route from most tactics solving books. The difficulty level of the composed works within it are steeply higher than most over the board combinations. I tried to recreate a lesson with a student, where we tackle a composed endgame study. I first break down the available data for the student, piece by piece. Then we gather the data and look for the next logical step. If the problem is too difficult, beyond what a club level player can manage to solve, I actually spell out the entire sequence. Some studies are simply to be played over to absorb their intricate patterns, *not to be solved*, due to their high difficulty levels. Tactics and combinations don't exist in isolation. Without the initial concept, calculation, planning, logic and assessment, the combination doesn't just magically appear from the void. A combination always has preceding causes and conditions. It isn't just pure math, as some believe.

Composed Endgame Studies and Mating Problems as Training Tools
"You don't have to solve them." GM Bill Lombardy

I met GM Bill Lombardy 40 years ago when we analyzed a game I played against FM Mark Duckworth. We talked about chess training and he gave me this advice: Go through books of composed mating problems and endgame studies. I told him that they were artificial and also too difficult to solve. His response puzzled me: *"You don't have to solve them. Just try for a few minutes and then look up the answer."* I thought it was bizarre advice and to my deep regret didn't listen to Bill until 39 years later, when I first discovered the training power of endgame studies and composed mating problems, especially mates in 2. After retiring from tournament play in 2019, I took up solving and was shocked to see my online rating rise (59-year-old players are not accustomed to improvement!). Then I began incorporating composed works for the first half of chess lessons and I was staggered by the results. Virtually every student who solved on a daily basis, improved. The most dramatic example is my student Jonathan, a member of the San Diego Chess Club. For the last 20 years he cycled between a rating of 1290 and 1360. Then after only six months of solving (mostly mates in 2. For endgame studies he mostly looks up the answers after a few minutes), he soared to 1576. I'm certain that he would have broken 1600 if the COVID-19 pandemic had not hit at the time and the San Diego Chess club hadn't closed down. All my life I have been better at strategic play than tactics. I was a tactical Hellen Keller, who at the late age of 59, finally found my Anne Sullivan. For desire to arise we must be aware of a superior alternative to what we currently have. Club level players want to improve. From my experience with students, most are proficient in the opening, decent strategists and most know their basic endings. Three underdeveloped factors I find over and over are:

1) An inability to calculate clearly, deeply and accurately. Calculation is critical for a combination's correct implementation. For this reason, I added a lot of calculation exercises in the book, since calculation cannot be separated from tactics and combinations. We all have a fear of heights when we calculate long lines. If you for example work on king and pawn endings, I absolutely guarantee improvement in your calculation abilities. They are

not the proper venue for idle speculation and reliance of intuition. It's all number crunching and hidden ideas.

2) Missed tactical opportunities, both for their own side and also missed combinations coming from the opponent as well. Most of us are handicapped by our illiteracy of profoundly embedded geometric patterns.

3) Lack of tactical and even strategic imagination. Imagination is larger than the sky, since it encompasses every idea in the universe. We may not realize that the vast majority of us are in a creativity rut, since we only look for conventional patterns. A composed work is a nuclear explosion, which obliterates rigid pattern orthodoxy. There are literally hundreds of thousands of patterns which we don't recognize and some which we can't even imagine existing. These can be mined from endgame studies and mating problems, which tend to be several magnitudes more profound than the vast majority of over the board combinations.

When it comes to combinations it's one thing to dream it and quite another to make it come true. The reason most players fail to improve tactically isn't lack of talent, or even lack of drive. We work feverishly on our openings, as if studying for our college entry SAT exam. It never occurs to us that our time may be better spent working on problem solving skills. It boils down to a misplaced priority of overstudy of openings and understudy of the art of solving problems over the chess board. That is all chess is: solving different problems and endgames are the perfect venue for it. If the opening is the Renaissance period and the middlegame the Industrial Revolution, then endings represent the post-apocalyptic society, with only a few remaining survivors. You can bs your way through in both opening and middle games and still get away with it. In endings, forget it. The need for precision skyrockets and guessing is downplayed. It's all calculation, planning and finding hidden tactics.

It is the student's job to listen and work, and the teacher's job to point. Lately I have been pointing a lot in the direction of composed works, which I discovered are essentially conventional combinations, on steroids. The word "composed" tends to come with a cargo of fear of being unable to solve and frankly, ignorance of the benefits. Many people believe a composed work is a place of make-believe, which has little to no application on our real-life chess. This is far from the truth. A composed work is a radical alteration from our normal training with combinations from tournament games. If we work on tactics in the conventional way, without progress, don't expect a change to follow unless you make a change in your training. They are in general, more difficult to solve than conventional puzzles, extracted from tournament games. Some of my students complain bitterly that they are too difficult to solve. My philosophy is that going easy on ourselves in our training, is misguided compassion. We are all obsessed with statistics. Your score on the first try of the book isn't important; your score the *second* time is. Because the second time you come armed with the imprints you picked up on your first reading. You see a level 4 or 5 position and think: "I'm in way over my head!" You are not alone and you are not even *expected* to solve it. Even partial solving earns progress. I say this over and over to whoever is willing to

listen: don't worry about getting problems, studies and combinations correct. Your improvement comes from the process of trying (and often failing) and then looking up the answer. That's it. If you do this with enough of these, your internal database loads up with tens of thousands of geometric patterns which previously were a mystery. There is no move or idea which is considered too crazy to even consider. In fact, after around a year of solving, our mind automatically seeks out previously unthinkable patterns and ideas. A composed work is that strange place where the outlandish is actually logical, reasonable and normal. Ideas in our tournament games tend to be linear, logical, with a beginning and an end.
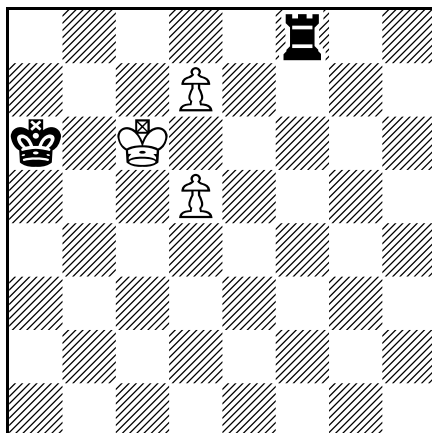
We rarely look for radical geometric shifts, which at first appear impossible. Our aptitude for chess is a result of nature's lottery. To some, becoming a strong player is easy, while to others, progress comes miserably slowly, or not at all. Whatever your natural ability, solving combinations, endgame studies and composed mating problems will raise you from where you currently are. Our questions find their answers for those who endure with patience and keep solving.

The current default belief system in the world chess community is: composed endgame studies are useful improvement tools, while composed mating problems are artificial, and therefore of no practical training value. I can tell you this belief is false. I put students on a regiment of mating problems, usually mates in 2 moves and can testify to their improvement in tactical skill. In this book there is a big final chapter/test for solving mates in 2. For stipulated mating problems there is no middle ground. Either you find the mate in 2, or you don't. Mate in 3, 4, 5 or winning Black's queen doesn't count. With immersion, we get better and better. Good luck on your journey!

Many thanks to Nancy for proofreading, thanks to professor Steven Dowd for composing millions of mates in 2 for the book, and finally thanks to Ville Matias (Father Vasilios) for his untiring help in researching tactical endings.

Cyrus Lakdawala, June 2021

90) N.Kopaev
Okonchaniya - Kon protiv Slona, Ladejni 1958

White wins
Level 2

The position looks a lot different than the brochure. At first glance it appears as if the rook up-side will easily draw, since Black's king looks close enough to help. In this case White's pawns – even though doubled – are deep enough to beat Black's lone rook.

1 d6!

Step 1: Push the back d-pawn one square, which gains a tempo, since Black's king is still unable to approach for defensive help. The rote 1 ♔c7? leads to a draw after 1...♔b5 2 d8♕ ♖xd8 3 ♔xd8 ♔c5.

1...♖a8

Or 1...♔a7 2 ♔c7 ♖g8 3 d8♕ ♖xd8 4 ♔xd8 when White promotes and wins.

2 ♔c7

Threatening to promote.

2...♖a7+

Exercise: Work out White's winning plan.

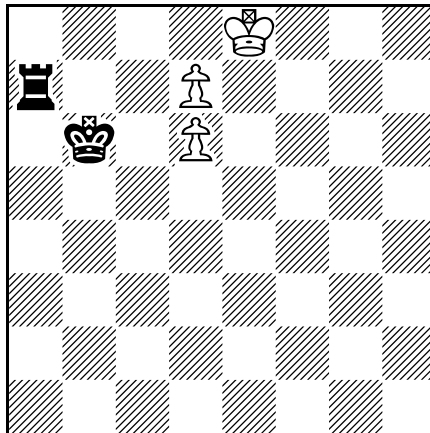**Answer:** Shift the king to the e-file, when Black's rook is unable to give checks.

3 ♔d8!

3 ♔c6 ♖a8 4 ♔c7 ♖a7+ wastes time. Of course White can still win if we find an eventual ♔d8!.

3...♔b6

Black's king is stuck on the queenside, too far away to help stop White's pawns.

4 ♔e8

White will promote both d-pawns.

4...♖a8+ 5 d8♕+ ♖xd8+

One thing a miser loathes is to be forced to donate to a charity. Normally a rook for a

queen is a good deal for the rook side. Not here though, since White's extra d-pawn will win the game.

6 ♔xd8 ♔c6 7 d7 1-0

White promotes.

---

91) N.Kopaev
Okonchaniya - Kon protiv Slona, Ladejni 1958

White wins
Level 4.5

1) White is a pawn up.

2) Black's rook is tied to a8, since if it moves without giving check, White promotes.

3) Here is the big problem: White's king is a million miles away and Black's king threatens to stroll over to b6, followed by ...♖xa7.

Exercise: Find a way to disrupt Black's plan.

Answer: 1 ♖a3!!

With this move Black's king must waste time moving laterally to the queenside. It allows White's king just enough time to come to the rescue of the a-pawn. 1 ♔g3? This is the move the majority of us would play in a tournament game, (mis)believing it to be White's only winning try. 1...♔d3 2 ♔f4 ♔c4 3 ♔e5 ♔c5! (3...♔b5? 4 ♔d6 ♔b6 5 ♖b1+ reaches the composition's conclusion) 4 ♔e6 ♔b6! (now is the right time) 5 ♔d6 ♖xa7 6 ♖b1+ ♔a5! draw.
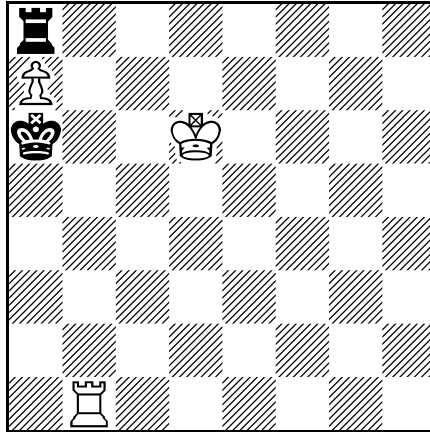
1...♔d2 2 ♔g3 ♔c2 3 ♔f4 ♔b2 4 ♖a6!

Absolute precision is required. 4 ♖a5? loses a tempo and allows Black to draw after 4...♔b3 5 ♔e5 ♔b4 6 ♖a1 ♔c5!.

4...♔b3 5 ♔e5 ♔b4 6 ♔d6 ♔b5 7 ♖a1 ♔b6 8 ♖b1+!

Black's position becomes constricted.

8...♔a6

8...♔xa7 9 ♔c7! wins Black's rook, or mates.

Exercise: Demonstrate White's win.

Answer: Paradoxically, we allow Black to take our rook pawn, with check!

9 ♔c7!

Threatening 10 ♖a1+, followed by ♔b7. The natural 9 ♔c6? blows it: 9...♖c8+ 10 ♔d7 ♖h8 draw.

9...♖xa7+

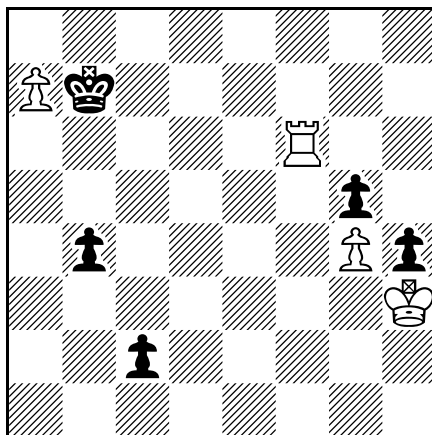9...♔xa7 The coroner ruled it a suicide. 10 ♖a1 mate.

10 ♔c6!

Black must hand over the rook to evade mate on the a-file.

10...♔a5 11 ♖a1+ 1-0

Black's rook falls.

92) A.Herbstman (extract)
FIDE revue 1959

White draws
Level 4.5

White's position is a game of Dungeons and Dragons, where we are given a choice of doors to enter, each containing its individual danger on the other side.

1) We are up a rook for two pawns.

2) Our a-pawn is one square from the promotion square, which immediately sets our radar up for tactics based on its deep position.

3) Our gigantic problem is that the king is far away and it is up to our lone rook to deal with Black's two deep passed queenside pawns, one threatening to promote immediately.

4) On top of this, even if by some miracle we manage to win both black queenside passers in exchange for our rook, we are still lost in the king and pawn ending, since Black is up a connected passed rook pawn on the h-file.

5) Our king position on h3 lead me to believe (correctly) this was going to be a stalemating problem. We can give up our rook and even allow Black to promote to a new queen, as long as we lure Black's new queen to our second rank, which would create stalemate. Such is my endless dilemma: I am skilled at discovering the study's theme and then have no idea how to deal with the implementation.

> **Exercise:** Find a way to set up this drawing scenario I described in number 5 on our list.

Answer: Move the rook to a6, threatening a8♕+. The rook of course is immune since if

taken, White promotes with check.

3 ♖a6!

Not:

a) 3 ♖c6? b3 4 a8♕+ ♔xa8 5 ♖c7 ♔b8! (not 5...b2? 6 ♖xc2 b1♕ 7 ♖a2+ ♔b7 8 ♖b2+! ♕xb2 stalemate) 6 ♖c3 ♔a7 7 ♖c6 ♔b7 8 ♖c3 ♔a6 9 ♖c5 ♔b6 10 ♖c3 ♔a5 11 ♖c4 ♔b5 12 ♖c3 ♔b4 13 ♖c8 ♔a3 and Black wins.

b) 3 a8♕+? ♔xa8 4 ♖c6 b3 5 ♖c7 ♔b8 (5...b2? 6 ♖xc2 b1♕ 7 ♖a2+! ♔b7 8 ♖b2+ ♕xb2 Stalemate.) 6 ♖c3 ♔a7! 7 ♖c6 ♔b7 8 ♖c3 ♔a6! 9 ♖c5 ♔b6 10 ♖c3 ♔a5! 11 ♖c4 ♔b5 12 ♖c3 ♔b4.
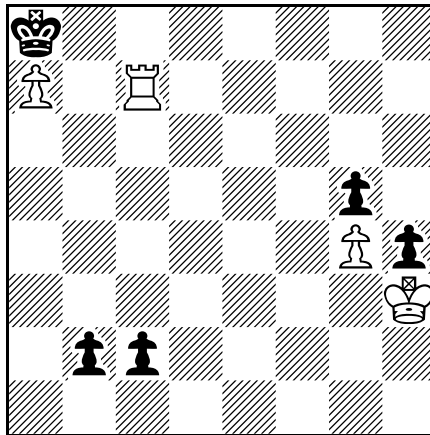
3...♔a8

So big deal. Black easily dealt with our shallow threat. We can move the rook to c6, but then will simply play ...b4-b3, protecting the c2-pawn, while threatening ...b3-b2. It's the only move I see, so I played it there anyway, not knowing how to proceed after that.

4 ♖c6 b3

We aren't going to stop ...b3-b2, so we may as well cover our a-pawn.

5 ♖c7! b2

Now I saw the answer.

> ***Exercise:*** How do we reach the desired stalemate scenario, as described in note 5?

Answer: First give check on c8 and give away our a-pawn. Why? Because it needs to be removed from the board if we are going to launch our stalemate combination, since with it on the board, our future ♖a2 will not come with check.

6 ♖c8+! ♔xa7 7 ♖xc2!

Step 2: Chop the c-pawn and allow Black to promote.

7...b1♕ 8 ♖a2+!

Step 3: Attraction. If Black's queen takes the rook, we achieve our stalemate.
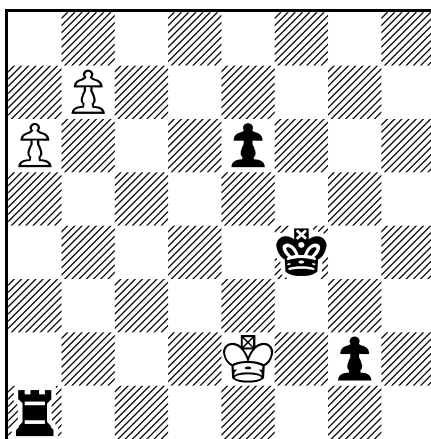
8...♔b7

8...♕xa2 is immediate stalemate.

9 ♖b2+!

Step 4: Double attack/attraction/stalemate. I insist!

9...♕xb2 ½-½

Stalemate.

93) S.Reshevsky-R.Fischer
New York/Los Angeles Match 1961

Black to play
Level 3.5

We are unaccustomed to seeing Bobby Fischer miss mates, which is just what he did here.

Exercise: What is Black's best move?

Answer: Zwischenzug and *not* promote on g1. Moving the king to e4 serves two important functions:

1. In this line White does not get to promote with check.

2. This line is a forced mate in 5 moves, while White can resist if Black immediately promotes. GM Issac Kashdan pointed out this simpler win.

49...♔e4!

The center is strengthened at the cost of the periphery, which turns out to be a good deal for Black. 49...g1♕?! This is the human move and the one Fischer played in the game.

He still won. Yet his move allowed Reshevsky to prolong the game and continue to resist after 50 b8♕+ after which Fischer was forced to work out a line which dodged perpetual check.

50 b8♕

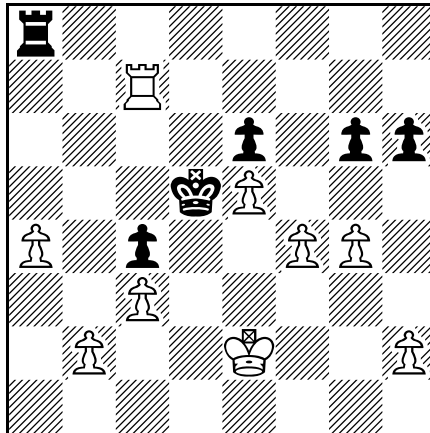50 ♔d2 g1♕ 51 b8♕ ♕c1+ 52 ♔e2 ♕e3 mate.

50...♖a2+! 51 ♔e1

Every downward spiral has its floor and White's unfortunate king just reached it.

51...g1♖ mate!

Or the less flashy 51...g1♕ mate.

---

94) R.Fischer-J.Durao
Havana Olympiad 1966

White to play
Level 3

Black is dead, from a legal and medical standpoint. Yet his spirit lingers on. Durao is refusing to resign. Fischer is three pawns up, yet his a4-pawn hangs and also Black has a strong king position.

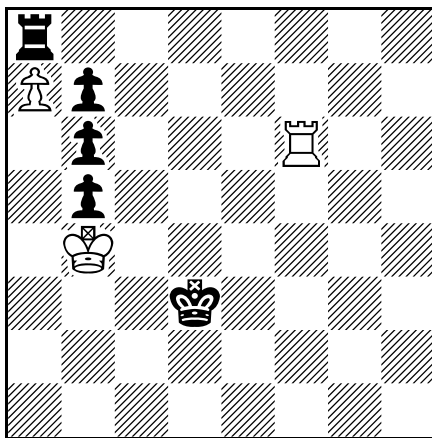> *Exercise:* If you find one strong move, you can force Black's resignation.
> What is it?

Answer: Mating net.

46 b4! 1-0

Threat: ♔e3 followed by ♖c5 mate, to which there is no reasonable answer. 46 b4! cxb3

is met with (46...♖xa4 47 ♖c5+ ♔e4 48 ♖xc4+ ♔d5 49 ♔d3 ♖c5 mate is coming) 47 ♔d3! 47...♖xa4 48 c4+ costs Black his rook. After 48...♖xc4 49 ♖xc4 b2 50 ♖b4 White wins.

<div style="border:1px solid; padding:10px; text-align:center">

95) A.Wotawa (extract)
Deutsche Schachzeitung 1967

</div>

White wins
Level 5

Our goal is simple: We must keep our a-pawn alive, while winning all three black pawns, getting our king to b7 to eject the black rook on a8, so we can promote our a-pawn. Now the object may be simple, yet the implementation is incredibly subtle. I'm not going to sugar-coat this and tell you this one is easy to solve. I kept falling for drawing traps, so be extra alert.

> **Exercise:** How should White proceed?

Answer: Step 1: It's crucial for us to retain our final pawn, so we need to swing our rook to the a-file.

3 ♖f3+! ♔c2 4 ♖f2+!

This subtle zwischenzug is only found by the most alert among us. When first attempting to solve this study I fell for the natural and shallow 4 ♖a3?? and only then did I notice 4...♔b2!. Black holds the draw since our rook runs out of squares along the a-file: 5 ♖b3+ ♔a2 6 ♖a3+ is perpetual check.

4...♔c1!

This puts up the greatest resistance. After 4...♔b1 5 ♔b3! (threatening ♖f1 mate)

5...♚c1 6 ♖f1+ ♚d2 7 ♖a1 ♚d3 8 ♖a2! ♚d4 9 ♚b4 ♚d5 10 ♚xb5 ♚d6 11 ♚xb6 ♚d7 12 ♚xb7 wins.

5 ♖a2

Now White threatens to eat all three black pawns and shift the king to b7.

5...♚b1 6 ♚b3!

6 ♖a3?? ♚b2! is the same draw as displayed in the note above.

6...♚c1

6...b4 7 ♖h2 ♚c1 8 ♖h1+ ♚d2 9 ♖a1 wins.

7 ♖a3!

7 ♖a1+ wastes time. 7...♚d2 Now White blows it with 8 ♚b4?? (8 ♖a2+ ♚c1 9 ♖a3! White transposes and still wins) 8...♚c2 9 ♚xb5 ♚b2 10 ♖a4 ♚b3! 11 ♖a1 ♚b2 is a repetition draw.
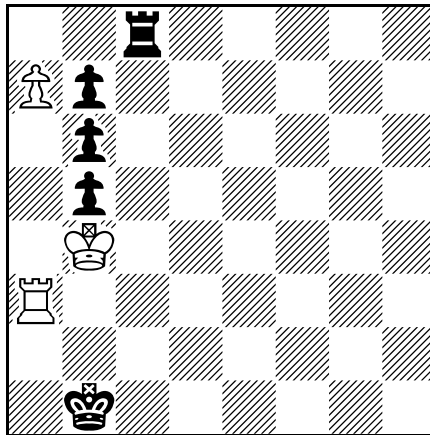
7...♚b1 8 ♚c3!

This move gains two full tempi. 8 ♚b4?? ♚b2! is drawn.

8...♖c8+

a) 8...b4+ 9 ♚xb4 ♚b2 10 ♖a4 ♚c2 11 ♖a2+ ♚b1 12 ♚b3 b5 13 ♖a5 ♚c1 14 ♚b4 ♚c2 15 ♚xb5 ♚b3 16 ♚b6 ♚b4 17 ♚xb7 wins.

b) 8...♚c1?? 9 ♖a1 mate.

9 ♚b4

Our king got a free jump to the fourth rank.

9...♖a8 10 ♚xb5 ♚b2 11 ♚b4!

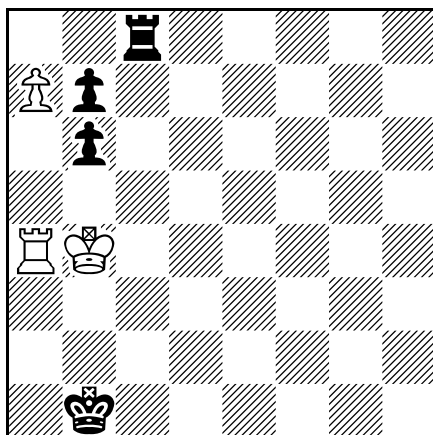11 ♖a4?? ♚b3! 12 ♖a1 ♚b2 Draw.

11...♚b1 12 ♚b3!

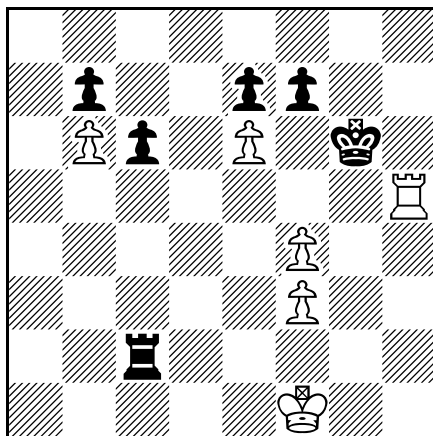We keep repeating the same tempo-gaining mechanism.

12...♚c1

12...b5 13 ♖a5 b6 14 ♖a6 ♚c1 15 ♚b4 ♚c2 16 ♚xb5 ♚d3 17 ♚xb6 ♚d4 18 ♚b7 wins.

13 ♖a4! ♚b1 14 ♚c3! ♖c8+ 15 ♚b4

Once again Black's rook is forced to move back to a8 to prevent promotion.
15...♖a8 16 ♔b5 ♔b2 17 ♔xb6 ♔b3 18 ♔xb7! 1-0

96) J.Hasek
Sachové Umenie 1974

White wins
Level 4.5

Exercise: The only way to win this is to find a promotion combination. How?

Answer: Push forward the f-pawn, offering our rook.

1 f5+! ♔g7

a) 1...♔f6 2 ♖h6+ ♔g7 3 ♖h7+ transposes.

b) 1...♔xh5 2 exf7 We promote and win.

2 ♖h7+!!

Step 2: Offer the rook again, this time on h7.

2...♔f8

a) 2...♔g8 3 ♖xf7 ♖b2 4 ♖xe7.

b) 2...♔xh7 3 f6! promotes one of the pawns. Every chess player has seen this kind of pawn promotion idea, unless maybe you live on a planet which circles Betelgeuse.
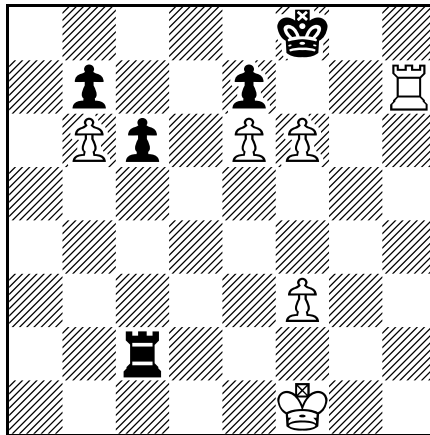
3 ♖xf7+ ♔e8

Black prevented pawn promotion, yet this is little comfort, since White now achieved a won rook ending.

4 ♖h7

Threatening back rank mate.

4...♔f8 5 f6!

Pawn breakthrough. White threatens back rank mate again.

5...exf6 6 ♖xb7

Black won't be able to deal with two white passed pawns, supported by a rook.

6...♖b2 7 ♖f7+ ♔e8 8 b7 1-0

8 b7 ♔d8 (after 8...c5 9 ♖c7 there is no defence to ♖c8+ and promotion) 9 ♖f8+ ♔c7 (9...♔e7 10 b8♕) 10 b8♕+ ♖xb8 11 ♖xb8 ♔xb8 12 e7 and Black's king is out of luck, one square too far away.