



KING ETHELRED'S COLLEGE OF ENGINEERING

Established in 978 (ish)

DEPARTMENT OF DEFENSIVE ENGINEERING, CROWN WORKS
AND APPLIED STUBBORNNESS, JOINTLY WITH BAGINBUN

'ZULUS, SIR. THOUSANDS OF THEM': A COMPARATIVE STRUCTURAL ANALYSIS OF TWO DEFENDED PERIMETERS

Rorke's Drift, 1879, and Jadotville, 1961; being also a note on a line that nobody says; a joint paper of King Ethelred's College of Engineering and King Diarmait's College of Engineering, Bannow Bay



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*Fortitudine.
Ingenio.
Tea and biscuits.*



ABSTRACT

The most famous line in the film *Zulu* is not in it. Nobody says 'Zulus, sir, thousands of them'. What Colour Sergeant Bourne says is 'The sentries report Zulus to the southwest. Thousands of them', which is a report, in the correct form, by a man who has been asked for one.[8,9] The Department takes this as its method. It has examined the defence of Rorke's Drift on 22 and 23 January 1879 as it would examine any structure that was loaded well beyond its rating and did not fail, and it has done so beside the defence of Jadotville in September 1961, which was loaded in the same proportion, did not fail either, and was thanked for it fifty-five years late.[1,21]

The paper is a joint one. King Ethelred's Department of Defensive Engineering holds that most strategic problems can be addressed with a rifle, a brew and not moving, and has waited some time for a case. King Diarmait's station at Baginbun has held the same view since 1170, when about a hundred men behind a bank and ditch saw off about three thousand with the help of a herd of cattle.[25] The authors set the two posts side by side: who commanded and why, what was built and of what, what came against it, what was fired, and what each army did about it afterwards. They treat the published figures as an engineer treats a drawing, with a tolerance, because the sources disagree about nearly everything except the dead.

The Department finds that the odds at the two posts were the same, between nineteen and thirty-two attackers to each defender on the published figures; that both commanders read the ground, chose not to move, built before they fought, and divided the post so that part of it could be lost; that the engineer in command at Rorke's Drift got nine feet of obstacle out of three feet of mealie bags by putting them on top of a ledge, and then left the water cart outside it; that about 19,100 rounds were fired there in a night; that the Department's own trial on the Fellows' Lawn reproduced the error exactly; and that Britain decorated its men within the year, partly to cover a defeat, while Ireland left its men undecorated for fifty-five years to cover an embarrassment. Both armies, in the authors' view, got the second part wrong, in opposite directions.

Research status. This is a fictional joint paper of two fictional colleges. The two actions, the people in them, the numbers and their disagreements, the rifle, the awards, the films and the lines quoted from them are real and referenced. The Department, the station at Baginbun, both authors, the Bursar, Mrs Partridge, Gerald, the Librarian, the Clerk of Works, the Professor of Large Numbers and the Trebuchet Research Group are not, and nor is the trial in Chapter 8. The pictures are period documents, credited in their captions; the shoebox and the map cupboard are the College's. The invasion of Zululand in 1879 was provoked by an ultimatum that London had not authorised, and the men who attacked Rorke's Drift were defending their country; the paper treats them accordingly. Nothing in it is a joke at the expense of the dead of any side.

Keywords: Rorke's Drift; Jadotville; Baginbun; perimeter defence; mealie bags; biscuit boxes; Martini-Henry; tolerance; Victoria Cross; An Bonn Jadotville; Chard; Dalton; Dabulamanzi; Quinlan; a rifle, a brew and not moving.

ACKNOWLEDGEMENTS

Major MacTavish has supervised four Crown Works papers without being asked to write one, and records that he did not mind. He thanks the Registry for the loan of the Department's copy of the film, which is on a format the College can no longer play, and Commandant Devereux-Roche for bringing a machine from Baginbun that can.

Commandant Devereux-Roche thanks the Major for the invitation and for not once, in six weeks, describing Jadotville as the Irish Rorke's Drift. He has returned the courtesy by not describing Rorke's Drift as the British Baginbun, although he notes that Baginbun was first by seven hundred and nine years and had cattle.

The Bursar was asked to price 19,100 rounds of Martini-Henry ammunition and has declined to give a figure in modern money, on the grounds that the last time he converted a Victorian sum the Department of Applied Economics wrote to him. He observes only that the post started the evening with 20,000 rounds and finished it with 900, that this is a drawdown of ninety-five and a half per cent in ten hours, and that he would like to know who was counting.[1]

Mrs Enid Partridge of the Senior Common Room, shown the plan of the post, asked why they did not simply leave. The Department has given her Commissary Dalton's answer in Section 4.1 and considers it the best piece of engineering judgement in the paper, made by a man whose job was the biscuits.

The Trebuchet Research Group asked whether a mealie bag could be thrown by a trebuchet. It was told that a mealie bag weighs two hundred pounds and that the purpose of the exercise was to keep the bags.[30] It has minuted that two hundred pounds is well within the machine's capacity and that the question was not answered.

Gerald was asked for the Department's file on the 24th Regiment of Foot. He has brought a biscuit box, which is empty, and the regimental march of the 2nd Warwickshires, which is not 'Men of Harlech'. [7] Both have been entered as apparatus.

Statement on respect. This paper concerns two fights in which men died. At Rorke's Drift seventeen defenders were killed and some hundreds of Zulus, a number nobody can now state; after the fighting, wounded Zulus were killed by the defenders and the relief, which the record states and this paper states once, in Section 9.1, and plainly.[1] At Jadotville no Irish soldier died and an unknown number of Katangese did. The humour here is directed at armies, their paperwork and their memories, at a film, at the Bursar and at the authors.

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NOMENCLATURE

Symbol	Meaning
Drift	A ford. Rorke's Drift is the crossing of the Buffalo River by the trading post of James Rorke, a merchant of Irish descent; the Zulu name is kwaJimu, Jim's land
Mealie bag	A sack of maize weighing about two hundred pounds; the principal structural member at Rorke's Drift, and the only one that could also be eaten
Biscuit box	A wooden case of army biscuit; laid in a line across the yard it made the inner wall, which this paper calls the bulkhead
Bulkhead	The Department's term for a wall inside a perimeter that lets part of a post be lost without losing the whole; borrowed from ships, where it is compulsory
The ledge	The rock shelf along the north front of the post, up to six feet high in places; with three feet of bags on top, a nine-foot obstacle
Perimeter defence	Holding a closed line about a position against attack from any side; Jadotville is cited in military textbooks as the model of it
Tolerance	The permitted spread about a stated dimension; here, the spread between the lowest and highest published figures for the same quantity
Odds	Attackers to each defender; nineteen to thirty-two at both posts, on the published figures
Martini-Henry	The British service rifle from 1871: a single-shot falling-block breech-loader in .577/450, twelve rounds a minute in good hands
Ibutho	A Zulu regiment, raised by age; plural amabutho. Four came to Rorke's Drift: the iNdloyengwe, uThulwana, iNdondlo and uDloko, the reserve at Isandlwana
Gendarmerie	The army of the breakaway state of Katanga in 1961, officered in large part by European mercenaries
Victoria Cross	Britain's highest award for gallantry; eleven for Rorke's Drift, seven of them to one company, which is the record that is actually held
An Bonn Jadotville	The Jadotville medal, presented to the men of A Company or their families on 2 December 2017, fifty-six years after the siege
The brew	The third term of the Major's maxim: water, tea or, by radio, whiskey; at both posts the supply that came nearest to deciding the matter
The Fellows' Lawn	The site of the Department's trial, Chapter 8; last dug in 1643 and not since, as Estates will tell you without being asked
The Major's maxim	That most strategic problems can be addressed with a rifle, a brew and not moving; the Department has now tested it twice
Read the contract	The motto of King Diarmait's College, first applied at Bannow Bay in 1169 and here applied to a United Nations mandate

1 INTRODUCTION

1.1 The line nobody says

Everybody knows the line. A sentry, or a sergeant, turns to an officer and says 'Zulus, sir. Thousands of them', and the officer says something dry. It is quoted in pubs, in headlines and in the titles of papers, including this one, and it is not in the film. The record of what is spoken, which the Department has checked against a timed transcript and a clip, has Colour Sergeant Bourne asked whether he has something to report and replying: 'The sentries report Zulus to the southwest. Thousands of them.'^[8,9,28] It is a better line than the one people remember. It gives a source, a bearing and a quantity, in that order, and it is delivered by a man standing to attention.

The Department begins here because the misquotation is the whole subject in small. Rorke's Drift is known chiefly through a film made eighty-five years afterwards, the film is remembered chiefly through a line it does not contain, and the action itself survives in figures that do not agree with one another. An engineer asked to assess a structure from drawings of that quality would begin by establishing the tolerance on every dimension. That is what this paper does, and it then does the same for a second structure, built eighty-two years later on the same continent by men who had very probably seen no such film, since it had not yet been made.

1.2 Why an engineering college

The senior officer at Rorke's Drift was not an infantryman. Lieutenant John Chard of the Royal Engineers had been sent to look after the ponts, the cable ferries, at the river crossing; he was senior to Lieutenant Gonville Bromhead of the 24th, who commanded the company, by three years and three months, a fact established by the departing major from the Army List.^[11,12] The film gives him the line 'I'm no line officer. I'm an engineer', and later, to a man who asks what it was like the first time, 'I came up here to build a bridge.'^[8,28] The College regards this as the natural order of things. The defence was a construction job, carried out with the materials on site in the time it took the enemy to arrive, by a Royal Engineer and a commissary of stores, and the Department of Defensive Engineering has been trying to get it onto the syllabus since 1879.

1.3 The sister college's standing

King Diarmait's interest is older. On 1 May 1170 Raymond le Gros landed at Baginbun Head with about a hundred men, ten of them knights, dug a bank and ditch across the neck of the promontory, and was attacked by a force from Waterford that Gerald of Wales puts at about three thousand. He won by driving a herd of foraged cattle into the attackers; about a thousand were killed or taken.^[25] The rhyme says that at the creek of Baginbun Ireland was lost and won, and the Experimental Landing Station has studied the small fortified post ever since, with the detachment of people whose ancestors were on both sides of the ditch.

There is a nearer connection. Sixteen of the 122 men of the 24th at Rorke's Drift were Irish, and the place is named after one: James Rorke, a trader of Irish descent, whose store became the mission and then the post.^[1,19] The film has Private Hook observe that it would take an Irishman to give his name to a rotten, stinking, middle-of-nowhere hole like this.^[28] The Commandant accepts the description of the hole and points out that Jadotville was no better, was not named after an Irishman, and was held by a hundred and fifty-six of them.

1.4 Scope, method and a note on the war

Chapter 2 sets out the two actions and the tolerance of the record. Chapter 3 does the arithmetic of the odds. Chapter 4 examines the works: what was built, of what, and why nobody left. Chapter 5 is the other side of the wall. Chapter 6 is the rifle and the round, and Chapter 7 the brew, which the Department nearly forgot, as one of its subjects did. Chapter 8 is the Department's own trial on the Fellows' Lawn. Chapter 9 is what each army did afterwards. Chapter 10 tests the film, and a second film, line by line. Chapter 11 concludes.

The Department states one thing before it starts. The Anglo-Zulu War was begun by the British High Commissioner, Sir Bartle Frere, with an ultimatum of 11 December 1878 that the Zulu king could not possibly have met, issued without the approval of London.[17] The army that crossed the Buffalo River in January was invading. The men who attacked Rorke's Drift had been ordered by their king not to cross the same river the other way, and did so anyway, which Chapter 5 takes up; but nothing in this paper should be read as suggesting that the people behind the mealie bags were the ones defending their homes.

2 THE TWO POSTS

2.1 Rorke's Drift, 22 and 23 January 1879

On the morning of 22 January the main camp of the invading centre column, ten miles to the east under the hill of Isandlwana, was overrun by a Zulu army of some twenty thousand. Over 1,300 of the defenders died, among them about 343 men of the Natal Native Contingent; the Zulus carried off about a thousand rifles and four hundred thousand rounds.[17] The Zulu reserve, the Undi corps of three to four thousand men under the king's half-brother Prince Dabulamanzi kaMpande, had taken almost no part. It crossed the river into Natal and made for the supply depot at Rorke's Drift, which held B Company of the 2nd Battalion, 24th Foot, a hospital with thirty-six patients, a store, and an engineer.[1,16,30]



Figure 2.1: The ground. Rorke's Drift on the Buffalo River, Isandlwana ('Isandlwana') to the east and Helpmekaar ('Helpmekaar') to the south, from the Military Map of Zululand compiled by the Intelligence Branch of the Quartermaster-General's Department, 1879. The pink line is the border; the track is the invasion road. From the South Atlantic Map Cupboard, where it had been filed under the wrong ocean.

Warned by fugitives from Isandlwana that afternoon, the garrison built a perimeter of mealie bags and biscuit boxes joining the store, the hospital and a stone cattle kraal. A company of the Natal Native Contingent and about a hundred mounted men who had arrived from Isandlwana left before the attack, which reduced the defenders from several hundred to about a hundred and fifty.[1] The Zulus came on at about twenty past four. They attacked until after midnight, took and burned the hospital, forced the garrison back behind the biscuit boxes, and drew off before dawn as the relieving column approached. Seventeen defenders were dead. The Zulu dead counted around the post numbered 351.[1]

2.2 Jadotville, 13 to 17 September 1961

A Company of the 35th Infantry Battalion, Irish Army, serving with the United Nations in the Congo, was sent to the mining town of Jadotville, now Likasi, in the breakaway province of Katanga on 3 September 1961, after the Belgian foreign minister asked that the white population be protected.[21] It is about two thousand kilometres north of Rorke's Drift, so that the two posts are a good deal nearer to each other than either was to the capital that sent its garrison.[32] The company's commander, Commandant Pat Quinlan, did not like the look of the place. When Katangese roadblocks appeared on 5 September he had his men stockpile water and dig trenches.[21,23] On 13 September the United Nations launched an operation in the provincial capital to seize the radio station and arrest the mercenaries; it misfired, and the Katangese gendarmerie, three to five thousand men with European mercenary officers, 81 mm mortars, a French 75 mm field gun and a Fouga Magister jet, fell on the one isolated company it could reach.[21]

The company held for five days. The attacks came in waves of about six hundred behind a bombardment; the Irish support platoon knocked out most of the mortars and the field gun with its own 60 mm mortars, and two armoured cars fired some fifteen thousand rounds.[21] A relief column of Irish, Indian and Swedish troops was stopped at the Lufira bridge with at least five Indian soldiers killed. On 16 September there was a ceasefire so that the Irish could get water; on the 17th, out of ammunition and food and without orders or any prospect of relief, Quinlan agreed terms. Five of his men were wounded. None was killed. The company was held for about a month and released on 15 October.[21,22]

2.3 The tolerance of the record

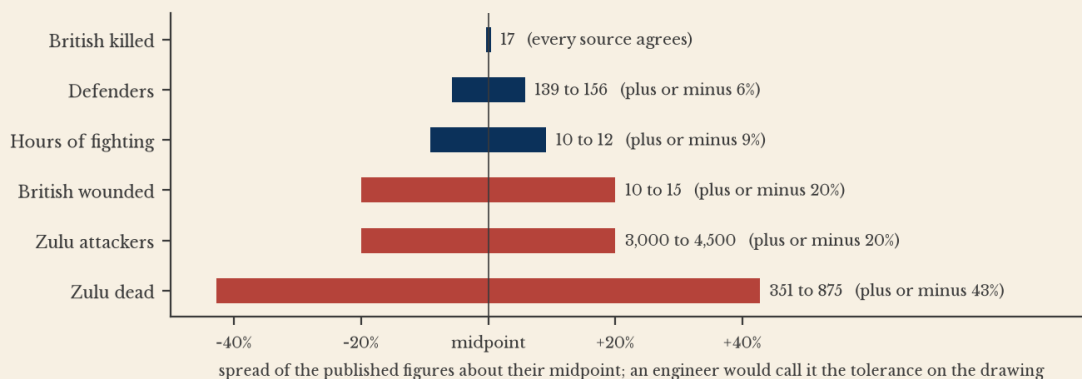


Figure 2.2: The published figures for Rorke's Drift, shown as an engineer would show them: the spread between the lowest and highest, about the midpoint. Sources: the National Army Museum, Wikipedia's synthesis of the literature, britishbattles.com and the World History Encyclopedia.[1,2,3,4]

The Department collected the figures for Rorke's Drift from four reputable accounts and found that they agree about exactly one thing. The defenders were 139, or 140, or 150, or between 150 and 156. The attackers were three thousand, four thousand, or about four and a half. The fighting lasted ten hours, or eleven and a half, or twelve. Ten of the garrison were wounded, or fifteen, or almost every man. The Zulu dead were 351 by count, 400, about 500, 600 on the estimate the leading historian of the Zulu side accepts, or 875 on the reckoning of a private who was there.[1,2,3,4] Even the medals move: four Distinguished Conduct Medals in one account and five in another.[1,2] Seventeen British dead, which one account gives as fifteen killed and two who died of their wounds, is the only figure on which they all agree.[30] The Department draws no moral from that and simply records it.

Miss Honoria Catchpole, Librarian of the Æthelred Library of Useful Numbers, was asked which of these figures the Library holds. She replied that the Library holds all of them, that holding all of them is what a library is for, and that the Department might care to try holding one.

Jadotville is better documented and no more settled. The company was 156 strong or 158; the attackers three thousand or five; the Katangese dead anything from three to three hundred.[21,23] The authors therefore carry every quantity in this paper as a range, and Table 2.1 sets the two posts side by side on that basis. The Major's note in the margin of the table reads 'None killed. Note that.' The Commandant's, beneath it, reads 'We had noticed.'

	Rorke's Drift, 1879	Jadotville, 1961
Commander	Lt John Chard, Royal Engineers, aged 31; a ferry engineer	Comdt Pat Quinlan, aged 41; an infantryman from Kerry
Defenders	139 to 156	156 (158 in one account)
Attackers	3,000 to 4,500, four Zulu amabutho	3,000 to 5,000 gendarmes and mercenaries
Attackers to each defender	19 to 32	19 to 32
Works	Mealie bags and biscuit boxes on a rock ledge; two loopholed buildings; a stone kraal	Trenches, dug a week beforehand; water stockpiled
Heaviest weapon against	Rifles and old muskets, poorly handled	81 mm mortars, a 75 mm field gun, a jet with bombs
Duration	10 to 12 hours	5 days
Defenders killed	17	None
Defenders wounded	10 to 15	5
Attackers killed	351 counted; 400 to 875 estimated	3 to 300
How it ended	The attackers withdrew as a relief column approached	Out of ammunition, food and water; terms agreed
Relief	Arrived at about eight the next morning	Stopped at the Lufira bridge
The brew	A water cart, left outside the wall by the engineer (Chapter 7)	Stockpiled, then drunk by the men and the machine-guns; whiskey requested
Recognition	11 Victoria Crosses within a year	None for 55 years

Table 2.1: The two posts. Ages from the officers' dates of birth; all other entries from the sources cited in this chapter, as ranges where the sources differ.[1,2,3,4,11,21,22,23]

Finding. Two companies of about a hundred and fifty men, eighty-two years apart, each attacked by three to five thousand. The record of the first is loose on every figure but its own dead; the second is loose chiefly on the other side's. Every number in this paper is therefore a range, and the ranges are part of the finding.

3 THE ARITHMETIC OF ODDS

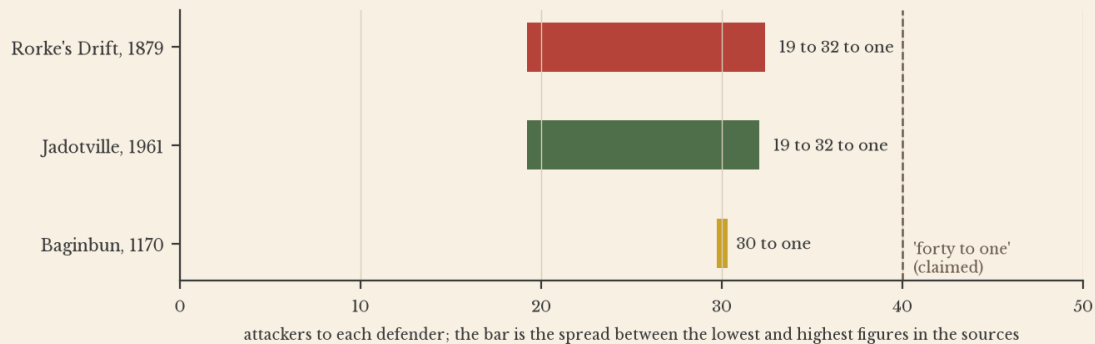


Figure 3.1: Attackers to each defender at the three posts, from the lowest and highest published figures, with the 'forty to one' that is sometimes claimed for Rorke's Drift. Source: Table 2.1 and Section 1.3; workings in Appendix A.

The odds at Rorke's Drift are given in print as anything up to forty to one; a distinguished military historian has the garrison 'outnumbered 40 to one'.^[1] The Department has done the division. The lowest published figure for the attackers over the highest for the defenders is 3,000 over 156, or nineteen to one; the highest over the lowest is 4,500 over 139, or thirty-two. Forty to one would need either six thousand Zulus or a hundred defenders, neither of which anybody claims. The same historian says the garrison killed twenty men for every defender lost, and that one survives: 351 counted dead over seventeen is 20.6.^[1]

The Department then did the same sum for Jadotville and obtained nineteen to thirty-two. It checked the arithmetic, since it does not expect two battles eighty-two years apart to return the same range to the nearest whole number, and the arithmetic is right: 3,000 over 156 and 5,000 over 156. Baginbun, on Gerald of Wales's figures, was thirty to one and sits inside both. The authors do not claim a law. They note that three small posts, in three centuries, held at about the same loading, and that the odds most often quoted for the most famous of them are the only ones in Figure 3.1 that are wrong.

The coincidence was referred to Professor Cuthbert Widdowson-Bligh, who holds the Chair of Large Numbers and Difficult Formulae. His reply was short. A range that runs from nineteen to thirty-two is so wide that almost any two sieges would meet somewhere inside it; agreement between loose figures is cheap, and he would be impressed only if each were known to one part in twenty. He asked to be told when either side had learned to count. The authors accept this, and have kept the chart because it still disposes of forty to one.

Odds are in any case a poor measure of load, as any structural engineer will say of a single number. What matters is how much of the attacking force can reach the wall at once, how long it can keep coming, and what it brings. The Zulus brought spears, shields, courage of a very high order and firearms they had not been trained to use, for ten hours. The gendarmerie brought mortars, a field gun and an aeroplane, for five days, and lost the mortars and the gun to a platoon with lighter ones. On that measure Jadotville was the heavier load by a wide margin, and the Major has said so without being asked.

Finding. Nineteen to thirty-two attackers to each defender at Rorke's Drift, and nineteen to thirty-two at Jadotville. 'Forty to one' fails; 'twenty for every defender lost' passes. By weight of weapon and length of time, Jadotville was the heavier load.

4 THE WORKS

4.1 Dalton's decision

The first engineering decision at Rorke's Drift was not to move, and it was not made by an engineer. When the news came from Isandlwana the officers considered loading the sick into wagons and falling back on Helpmekaar. Acting Assistant Commissary James Dalton pointed out that a small column in open country, slowed by carts full of hospital patients, would be overtaken and destroyed by a force that could run.[1] Dalton was forty-six, had enlisted in the 85th Foot at seventeen, transferred to the commissariat, served on the Red River expedition and retired in 1871; his Victoria Cross citation says that he 'superintended the work of the defence'.[13] This is the answer to Mrs Partridge. They did not leave because a man who had spent his life moving stores knew exactly how fast a wagon goes.

It is also the Major's maxim in its original form. Not moving is a calculation, not a temperament, and it holds whenever the enemy is faster than your slowest cart. Quinlan made the same calculation at Jadotville a week before he needed it, and wrote it into the ground with shovels.

4.2 Bags, boxes and a ledge

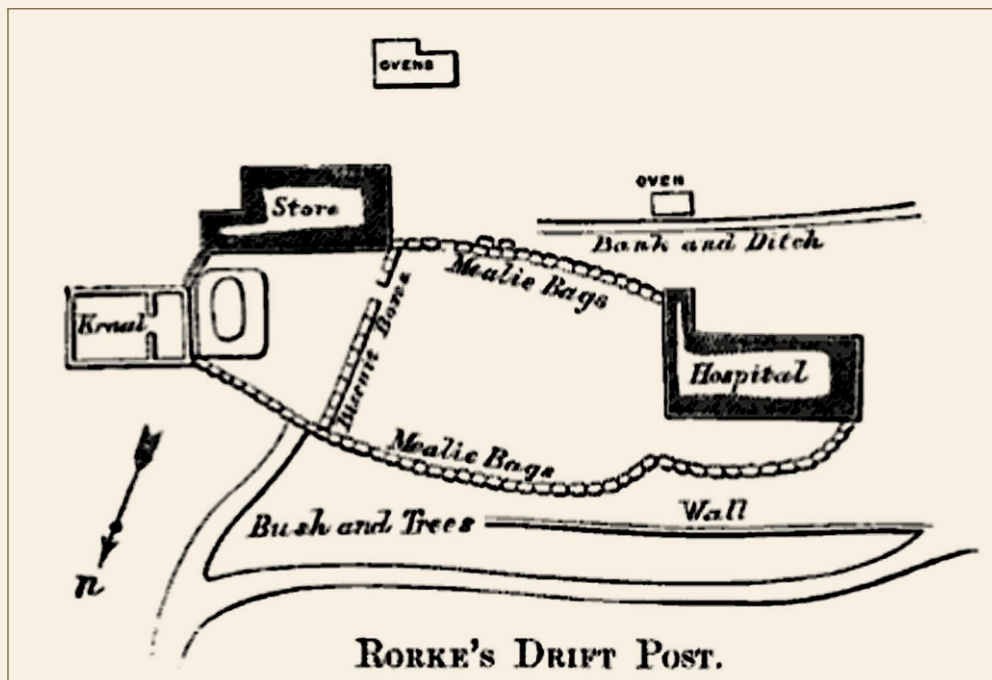


Figure 4.1: 'Rorke's Drift Post': a period plan after Lieutenant Chard's, showing the store, the hospital, the stone kraal, the two lines of mealie bags and, across the yard, the line of biscuit boxes. North is to the foot of the plan. The surviving versions of Chard's plan differ in detail (Section 4.5). Found in a shoebox under Gerald's desk, which is curious, as Gerald has a stool.

The materials were what a supply depot holds. Mealie bags, at two hundred pounds each,[30] were carried out of the store and laid as walls between the buildings; biscuit boxes and crates of tinned meat filled the gaps; the hospital and store were loopholed and their outer doors barricaded with furniture.[1] The bag walls were only about three feet high. What made them a fortification was where Chard put them. James Rorke had built on the edge of a flat shelf of rock that drops as much as six feet along the north front, and Chard, in the words of the leading historian of the battle, was quick to see the advantage and ran his main line of barricades along the top of it, so that an attacker faced 'a barrier some nine feet high'.[5] Three feet of maize became nine feet of wall because an engineer looked at the ground before he looked at the stores. The Department teaches nothing more important than that, and has the plan on the wall.

4.3 The bulkhead

The line of biscuit boxes across the yard in Figure 4.1 is the part of the design the Department most admires. It was built through the middle of the post before the attack, to allow a staged withdrawal, and it divided the perimeter into two compartments.[1] When the hospital was taken and set alight, the garrison gave up the western compartment, fell back behind the boxes, and held a perimeter about half the size with the same number of rifles; the patients were brought out through holes cut in the partition walls, one man holding the doorway with the bayonet while another broke through, and across the open yard.[1,15] A naval architect would call the box line a bulkhead: the difference between a post that fails when breached and one that floods a compartment and carries on.

4.4 Quinlan's trenches

Quinlan had no ledge and no store. He had ten days, some shovels, and a poor opinion of the welcome. When the roadblocks went up on 5 September he had his men dig further trenches and stockpile water, and on the 9th he asked that the company either be withdrawn from Jadotville or be reinforced; it was neither.[21,23] When the attack came, on 13 September, the company was below ground and the attackers were not, and its mortars found the Katangese guns first. Ireland's national broadcaster records that his perimeter defence is cited in military textbooks around the world as the best example of its kind.[22] The Commandant adds that it was cited rather more abroad than at home, and refers the reader to Chapter 9.



Figure 4.2: A Company's trenches at Jadotville, September 1961. Departmental reconstruction from the equipment and ground described in the sources; the crate has been inspected and contains no whiskey.

4.5 What the record does not give

The Department wished to state the length of the perimeter at Rorke's Drift and the number of rifles to the yard, and cannot. No account it has found gives a measured figure, and the plans cannot be scaled. The historian Ian Knight has shown that the surviving versions of Chard's own plan, the ancestor of Figure 4.1 and of almost every map of the fight, disagree with one another, and that reconstructions resting on them are 'built distinctly upon shifting sands'. [5] A recent reference entry calls the same wall breast-high, where Knight has about three feet, and gives a hundred yards for the line between the store and the hospital.[30] An engineer who cannot measure says so. The authors give no rifles per yard, and regard any figure met elsewhere as taken off a sketch.

Finding. Both posts were built before they were fought. At Rorke's Drift a commissary worked out that they could not outrun the enemy, an engineer put three feet of bags on six feet of rock, and a line of biscuit boxes let the post lose half of itself and live. At Jadotville an infantryman dug a week early. The length of the perimeter at Rorke's Drift is not reliably known.

5 THE OTHER SIDE OF THE WALL

5.1 The Undi corps

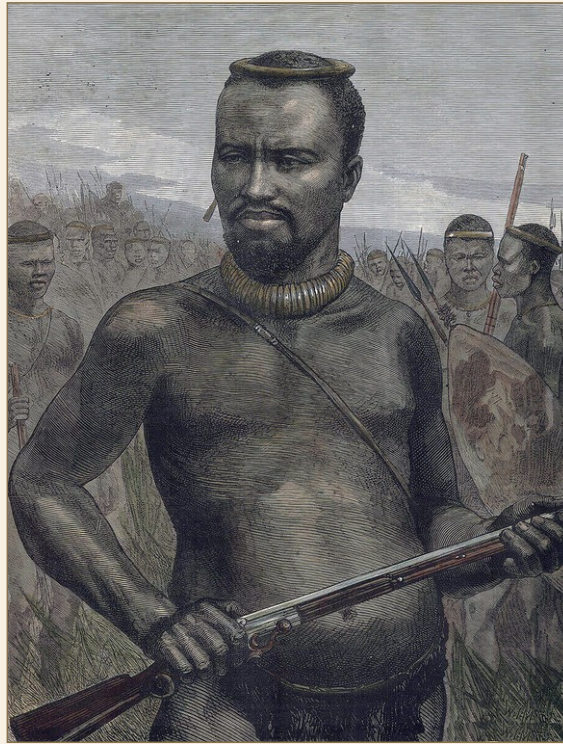


Figure 5.1: Prince Dabulamanzi kaMpande (about 1839 to 1886), half-brother of King Cetshwayo, who led the Undi corps at Rorke's Drift; a hand-coloured engraving from the British illustrated press of 1879. He holds a rifle; he was known as a good shot and a horseman. From the same shoebox.

The men who attacked Rorke's Drift had already done a day's work. The four amabutho of the Undi corps, the iNdluyengwe, uThulwana, iNdlondlo and uDloko, had been held in reserve at Isandlwana and had taken almost no part in it.[1,16] By the time they reached the post at about half past four they had marched some twenty miles from the camp they had left at eight that morning, and they then spent, on one reckoning, eleven and a half hours storming a fortified position, with spears against breech-loading rifles at a range of a few feet.[1] The Department has commanded infantry and has supervised research students, and does not know of another body of men it could have asked that of.

They should not have been there. Cetshwayo had ordered his army to fight only in defence of Zululand and not to cross the border; Dabulamanzi crossed it on his own authority, in what the record calls an unplanned raid rather than any organised counter-invasion.[1,16] His tactics, the same record says flatly, proved ineffective against the small garrison. Some of his men had fire-arms, old muskets and antiquated rifles for the most part, but they were poorly trained in them and short of ammunition.[1] He went on to command at the siege of Eshowe and at Gingindlovu, outlived the war and the kingdom, and was shot dead in a scuffle with Boers in 1886.[16] The Department records him as an officer who disobeyed his orders and attacked a prepared position, and was served by men who deserved a better plan.

5.2 The gendarmerie

The force at Jadotville was a different instrument: a conscript gendarmerie stiffened by Belgian settlers and by French, Belgian and Rhodesian mercenaries, among them the French officer Roger Faulques.[21] It had the heavier weapons, the numbers, the water and the only aircraft in the sky, and its plan was sound: isolate the company, bombard it, and attack in waves until it broke. It failed because the company was dug in and shot straight, because the Irish mortars found the Katangese guns before the reverse happened, and because men attacking in the open in batches of six hundred are a target whatever they are carrying.[21] The Katangese who died at Jadotville, and nobody knows whether that was three or three hundred, were mostly African conscripts led by Europeans who had been paid to be there. The Commandant notes that the contract, on that side also, repays reading.

Finding. Each post was attacked by brave men badly used. The Undi corps ran from one battlefield to another against its king's orders and was thrown at a ledge. The gendarmerie had every material advantage and spent it in the open. Neither defence would have held against the same attackers better led, and both commanders behind the wall knew it.

6 THE RIFLE AND THE ROUND

6.1 A short-chamber Boxer-Henry miracle

When the Zulus have gone, the film's Bourne says it is a miracle, and Chard replies: 'If it's a miracle, Colour Sergeant, it's a short-chamber Boxer-Henry point four five calibre miracle', to which Bourne adds a bayonet, with some guts behind it.[8,28] The Department has checked the specification. The Martini-Henry entered service in 1871: Friedrich von Martini's falling-block action, Alexander Henry's rifling, and a .577/450 cartridge of Colonel Boxer's pattern throwing a 485-grain lead bullet on 85 grains of black powder. It weighed eight pounds seven ounces, was forty-nine inches long without the bayonet, could be fired twelve times a minute, and was effective to four hundred yards.[18] The film's description is correct in every term, which is more than can be said for its description of Private Hook.

It was not a miracle, and the garrison knew its faults. The cartridge case was rolled brass foil, thin and pliable; it expanded in a hot, fouled chamber and stuck, and the extractor tore through the rim, so that a man might have to clear his rifle with a knife or a ramrod while somebody was coming over the bags at him.[18] Black powder fouling made it worse with every round, and after a few dozen the barrel was too hot to hold. The rifle gave the defenders a rate of fire no spear could answer, and then, several times an hour, it stopped. Bourne's addition is the more accurate half of the exchange.

6.2 Nineteen thousand one hundred rounds

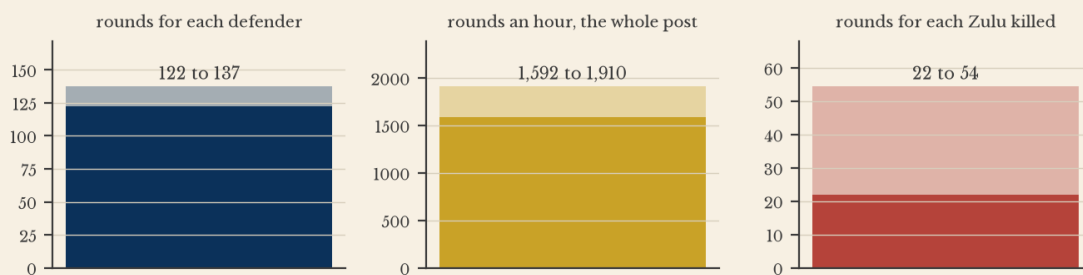


Figure 6.1: What 19,100 rounds comes to. The post held 20,000 rounds in reserve and had 900 left. In each panel the solid bar is the low figure and the tint the high, from the ranges in Table 2.1. Workings in Appendix A.[1]

The store held twenty thousand rounds when the fighting started and nine hundred when it stopped.[1] That is about 19,100 rounds in ten to twelve hours: between 122 and 137 for every defender, the whole post firing at some sixteen to nineteen hundred rounds an hour, all night. Against the Zulu dead, counted and estimated, it is between twenty-two and fifty-four rounds for each man killed, at ranges that were often the length of the rifle. The Department does not find this surprising and does not think the Bursar should. It was dark, the targets were moving and under cover, a great deal of the fire was meant to keep heads down. What the number shows is that the defence was a matter of supply. A post with two thousand rounds would have fallen by supertime, and the man who had seen to it that there were twenty thousand was, again, the commissary.

The Major observes that 122 rounds a man in a night is about what he would expect of B Company, and rather less than he would expect of the Commandant's. The Commandant replies that his company fired until there was nothing left to fire, which is the only rate that signifies, and that the Bursar's copy of Figure 6.1 has the third panel circled in red.

6.3 The Irish armoury

A Company went to the Congo with the new FN rifle, which readers of the College's paper on the L1A1 will recognise as the parent of the Major's favourite weapon, and with supporting arms from the previous war: water-cooled Vickers guns, 60 mm mortars and the Bren.[23,27] The Vickers belongs to an earlier war than the men who served it. It is also a gun that will fire for as long as it is given water and belts, which at Jadotville was the difficulty. The company did not run out of courage or of position. It ran out of things to fire and things to drink, in that order, five days' march from anyone who could bring more.[21] The second of those is the next chapter.

Finding. The film's description of the rifle is exact. The rifle itself jammed on foil cartridges and fouled with black powder, and the bayonet finished what it started. Rorke's Drift fired 19,100 of 20,000 rounds and was relieved; Jadotville fired everything it had and was not. Both defences were, at bottom, questions of supply.

7 THE BREW

The Major's maxim has three terms, and the paper has so far examined two. Chapter 4 was not moving and Chapter 6 was the rifle. The brew was left until now because the Department assumed, as soldiers do, that it would take care of itself. It does not. At both posts it was the supply that came nearest to deciding the matter, and at one of them it was left outside.

7.1 The water cart

At half past three on the afternoon of 22 January, with the wall nearly built, Chard went back down to the river and ordered his men up to the post 'with the water cart and tools'.^[33] The cart came up. It did not come in. The historical society that keeps the timeline of the action records that it was this water cart that Chard 'left outside the final defensive position at the Mission Station and had to lead a bayonet charge to recover'.^[33]

The College has admired Lieutenant Chard for several chapters and records this in the same spirit. The engineer who put three feet of maize on six feet of rock, who ran a bulkhead through his own yard and thought about it before he needed it, enclosed twenty thousand rounds, a hospital, a cattle kraal and a storehouse full of biscuit, and left the water on the other side of the wall. The garrison fought through the evening behind its own rations with the water cart on the wrong side of them, and went out for it with the bayonet.^[1,33]

The Major regards this as the most instructive fact in the paper, and has asked that it be set in ordinary type, since capitals would be unkind. A perimeter is a list. What is inside the line is what you have; what is outside it belongs to the other side until further notice; and the time to read the list is before the first shot and not after the hospital has caught fire. Every first-year in the Department is now required to draw the perimeter of their own experiment and write the word WATER inside it.

7.2 Jadotville, where the guns drank too

Quinlan read the list. When the roadblocks went up he had his men stockpile water as well as dig.^[23] It was not enough to last five days, and the men were not the only ones drinking it: his principal weapon, the Vickers, is a water-cooled gun, which is to say that it has to be given a drink like everybody else.^[21] The ceasefire he negotiated on 16 September was, in terms, a ceasefire so that the Irish could get water. By the 17th the company was out of ammunition and food and low on water, and that was the end.^[21]

In the middle of it he sent the message for which the siege is remembered: that they would hold out until the last bullet was spent, and could do with some whiskey.^[21] The Commandant asks that it be read correctly. It is not bravado and it is not a joke. It is a supply return, from an officer who had already asked in writing to be withdrawn or reinforced and had been given neither, stating what he had left and what he lacked, in the order of their importance to an Irish infantry company. The Department has had it framed. Nobody sent the whiskey either.

Finding. The maxim has three terms and the third is a supply problem. At Rorke's Drift the engineer built an excellent wall and left the water outside it. At Jadotville the infantryman stockpiled water and his machine-guns drank it. Neither post ran short of courage. Draw the perimeter; then read what is inside.

8 THE LAWN TRIAL

8.1 Method, permissions and procurement

The Department holds that a finding is not a finding until it has been built. It therefore undertook to reconstruct the essentials of both defences on the Fellows' Lawn: a wall of mealie bags three feet high, a bulkhead of biscuit boxes, and, for the sister college, a trench. What follows is the Department's own trial and is, like the Department, fictional. The arithmetic is real and is in Appendix A.

Estates was consulted. Mr Arthur Stobbs, Clerk of Works and Keeper of the Lawn, observed that the Fellows' Lawn was last dug in 1643, by people who did not ask either, that it took until 1911 to get the level back, and that he was not minded to let a Commandant do in an afternoon what Parliament's engineers had needed a month for. The trench was refused. The Commandant has noted that Quinlan did not apply to Estates, and believes this may be the secret.

A wall a hundred yards round and three feet high, at two hundred pounds a bag, came on the Department's estimate to four hundred bags, or a little under thirty-six tons of maize.[30] The Bursar approved twelve. The trial was assessed on the College's form, in use for everything dangerous since the chemistry store caught fire in 1979.[34] Three hazards were entered: manual handling, a mealie bag being heavier than the Fellow lifting it; the trebuchet; and the tea urn. The urn scored highest, being the only item on the lawn that was both hot and full. The attacking force was the Trebuchet Research Group, which had asked, and would not stop asking.

8.2 Results

Element	As built	Result
The wall	Twelve bags in four courses of three: nine feet long, three feet high	Held. The attackers walked round it
The bulkhead	Eleven biscuit tins from the Senior Common Room, Rich Tea	Breached at eleven o'clock by the Senior Common Room. Contents consumed; tins recovered empty
The trench	Not dug	No result. The Commandant has appealed to the Vice-Chancellor
The trebuchet	One, at forty yards	Three bags thrown. All three fell short and were added to the wall, which finished the trial at fifteen bags: the only fortification in the literature to have been reinforced by the enemy
The brew	One urn, forty cups, sited by the Major	Left outside the wall
Recovery of the urn	Four first-years and the Commandant, at the point of a clipboard	Recovered at twenty to four, lukewarm

Table 8.1: The lawn trial. The trial, the lawn and the urn are the Department's and are fiction; the weight of a mealie bag and the hundred yards of wall are not.[30]

8.3 What the trial showed

The Major built the wall first, and when he had finished the urn was outside it. He states this himself and wishes it recorded that he had been busy. The Department has therefore reproduced, to within the tolerance of the record, the one mistake Lieutenant Chard is known to have made, and by the same method. Professor Widdowson-Bligh, asked for the odds of this happening by chance, replied that it was not chance.

The Commandant's note on the trial reads, in full: 'A wall nine feet long is a bus shelter. Dig.' The Major's reply reads: 'Ask Stobbs.' Mrs Partridge has asked for her tins back. Miss Catchpole has catalogued the twelve bags under Apparatus and the three that arrived by air under Donations.

Finding. A perimeter has to be closed, which costs thirty-six tons of maize and not one. A bulk-head must not be edible during the working day. And the brew goes inside the wall. The Bursar has been shown Figure 4.1 and has authorised a thirteenth bag.

9 AFTERWARDS

9.1 The morning

The Department states the following once. When the Zulus had gone, the garrison and the relieving column found the bodies of the patients who had been dragged from the hospital, and in the hours that followed they killed the Zulu wounded who lay around the post; a gallows was put up for men thought to have behaved treacherously.[1] The count of 351 Zulu dead includes them and the larger estimates include more. It was done by exhausted men who had seen what had been done to their sick, and it was still the killing of wounded prisoners. The film ends before it. This paper does not, and it has nothing further to say about it than that it happened.

9.2 One disaster a day



Figure 9.1: Elizabeth Thompson, Lady Butler, *The Defence of Rorke's Drift*, 1880. The survivors posed for her at Portsmouth in the uniforms they had worn. Chard and Bromhead stand at the centre; the chaplain, George Smith, hands out cartridges; Surgeon Reynolds tends a wounded corporal at the right. The hospital burns behind. Royal Collection Trust, RCIN 405897.[26,31] The College's copy is a postcard.

The film's Chard tells the missionary that the army does not like more than one disaster in a day, and its Bromhead adds that it looks bad in the newspapers and upsets civilians at their breakfast.[10,28] That is the screenwriters' joke, and it is also the most serious charge ever made against the awards. Eleven Victoria Crosses were given for Rorke's Drift, seven of them to B Company, and they began to be presented within six months; Hook had his in August 1879.[1,15] Sir Garnet Wolseley, who took over the command, wrote that it was 'monstrous making heroes of those who, shut up in buildings at Rorke's Drift, could not bolt and fought like rats for their lives', and thought Chard the most uninteresting and stupid-looking fellow he had met.[1,11] That October the survivors were received by the Queen at Windsor and then sat for Figure 9.1, whose painter was pleased to have shown 'in that scuffle, all the V.C.'s and other conspicuous actors in the drama'.[31]

The authors think Wolseley half right. The awards did serve to cover a defeat, and the speed of them says so. But a man who cannot bolt can still stop fighting, and the garrison did not; and the one cross that was not rushed is the one that best survives inspection. Dalton, who had argued for staying, designed much of the defence and fought at the barricade until he was shot, was left off the first list altogether. He was a commissary and not a gentleman. His cross was presented on 16 January 1880, almost a year after the fight, following a campaign on his behalf.[13] Colour Sergeant Bourne, who was twenty-three, received the Distinguished Conduct Medal and was offered

a commission, which he declined because, as the eighth son of his family, he could not afford one.[14]

9.3 Jadotville Jacks

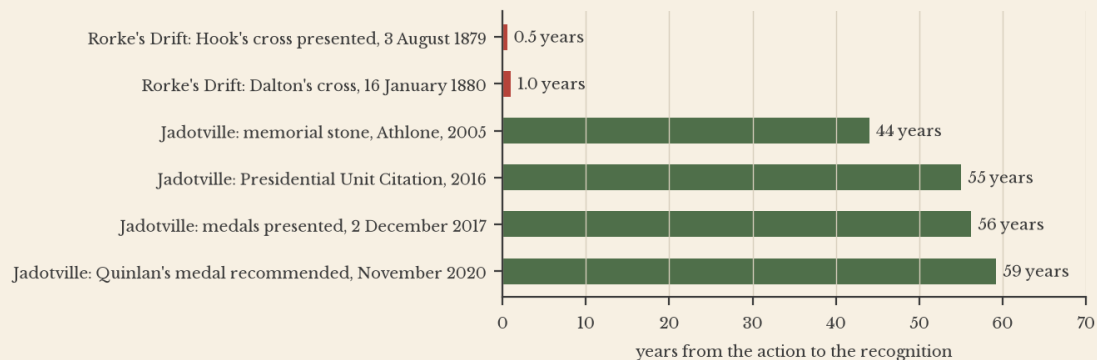


Figure 9.2: Years from the action to each act of recognition. Sources: the dates in Sections 9.2 and 9.3.[13,15,21,22]

A Company came home to silence. It had surrendered, on a United Nations operation that had gone wrong in front of the world, and on the day after it did so the Secretary-General was killed in an air crash on his way to negotiate a ceasefire;[29] nobody in authority wished to discuss it. Quinlan recommended a number of his men for the Military Medal for Gallantry, the highest Irish award for valour. None was awarded. Within the Defence Forces 'Jadotville Jack' became a term of contempt for a man who gives up.[21,22,23] Quinlan served on, retired a colonel, and died in 1997 without a word of official acknowledgement that he had fought one of the most economical defensive actions of the century and brought every one of his men home alive.

The acknowledgement came in instalments, and Figure 9.2 shows the intervals. A review was begun in 2004; a stone was put up at Custume Barracks in Athlone in 2005; a Presidential Unit Citation, the first in the history of the state, followed in 2016, the year a film was released; the medals were presented on 2 December 2017; and in November 2020 a review group recommended that Quinlan himself be decorated, twenty-three years after his death.[21,22] King Diarmait's motto is 'Read the contract', and the Commandant has read this one. A company was sent to a place it could not be supported in, under a mandate that did not say what it was for, was attacked because of an operation it had not been told about, and was then held responsible for the result. The fault in a contract is seldom found on the side of the people who dug the trenches.

Finding. Britain decorated at once, generously, and partly to change the subject; its own general said so, and the one cross that came late went to the commissary who deserved it most. Ireland decorated nobody for fifty-five years, to avoid the subject altogether. The authors, one from each army, find both their services in error, in opposite directions, and for the same reason: the medals were about the institution and not about the men.

10 THE FILMS, TESTED

Zulu was directed by Cy Endfield, produced by Endfield and Stanley Baker, who played Chard, and written by Endfield and John Prebble from Prebble's magazine article of 1958. Richard Burton narrated. It opened in London on 22 January 1964, the eighty-fifth anniversary, and gave Michael Caine his first major part on the strength of what the director called the worst screen test he had ever seen. King Cetshwayo was played by his own great-grandson, Chief Mangosuthu Buthelezi.[7] It is a very good film, and the Department tests it below as it would test any other source. *The Siege of Jadotville* (2016), directed by Richie Smyth from Declan Power's book of 2005, with Jamie Dornan as Quinlan, is tested more briefly, because it did what the first film could not: it got the recognition moving.[24]

The claim	The record says	Result
Commonly quoted from the film: 'Zulus, sir. Thousands of them'	Not in the film. Bourne: 'The sentries report Zulus to the southwest. Thousands of them.'	The public fails; the film passes
A Welsh regiment, and four Joneses in C Company	The 24th (2nd Warwickshire) Regiment of Foot; it became the South Wales Borderers in 1881. Of 122 men of the 24th present: 49 English, 32 Welsh, 16 Irish, 1 Scot, 3 born overseas, 21 unknown. It was B Company	Fails, musically
'Men of Harlech' against the Zulu war chant	The regimental march was 'The Warwickshire Lad'. No singing contest took place	Fails; the best scene in it
Hook a thief, a malingerer and a drinker	A teetotaler with good-conduct pay, who held the hospital with the bayonet; later of the British Museum, in charge of umbrellas. His daughters walked out of the premiere	Fails, and owes an apology
Bourne a tall veteran in middle age	Aged 23, of modest height, the youngest colour sergeant in the army, known as 'The Kid'. Died 9 May 1945, the last survivor	Fails; the character is truer than the casting
Witt a drunken pacifist	A teetotaler who had helped scout the Zulu approach and left to see to his family	Fails
Chard and Bromhead dispute the command	The departing major looked it up in the Army List; Chard was senior by three years	Fails, politely
'A short-chamber Boxer-Henry point four five calibre miracle'	The Martini-Henry, .577/450 Boxer cartridge, Henry rifling	Passes in every term
Bromhead on the levies, and Adendorff's reply: 'They died on your side, didn't they?'	About 343 of the Natal Native Contingent died at Isandlwana that morning. The company at the Drift did leave, with its officer	Adendorff passes
The Zulus carry rifles taken at Isandlwana	The Undi corps had not fought there; one synthesis says some captured rifles were used, another that the firearms were old	Unresolved
The Zulus salute the garrison and withdraw	They withdrew because a relief column was coming	Fails; generously meant
'The army doesn't like more than one disaster in a day'	Wolseley: 'monstrous making heroes' of them	Passes, uncomfortably

The claim	The record says	Result
Commonly said, not by the film: eleven Victoria Crosses is the most for one action	Twenty-four were won on one day at Lucknow in 1857. The record held is seven to one unit in one action	Fails as usually stated
(2016) Jadotville as a lone Irish stand	A relief column of Indian, Irish and Swedish troops fought at the Lufira bridge and lost at least five Indian dead	Fails by omission

Table 10.1: The films, tested against the record. Lines as spoken are from a transcript, checked against Wikiquote and clips; the record from the sources cited.[1,6,7,8,9,10,14,15,17,20,21,28]

The score is nine failures, three passes, one that the public fails on the film's behalf, and one the sources will not settle. The Department does not think this matters much. The film is wrong about the regiment, the song, the sergeant, the missionary and the private, and right about the things an engineer cares for: the walls, the rifle, the fear, the arithmetic of a shrinking perimeter, and the fact that the man in charge had come to build a bridge. Hook's family are owed the correction and have had it from every historian since. The rest is what happens when a good story is told well by people who needed a Welshman to sing.

Finding. *Zulu* fails on most particulars and passes on the structure; its most famous line is one it does not contain, and the line it does contain is better. *The Siege of Jadotville* leaves out the men who died trying to relieve the post. It also did in one year what fifty-five years of correspondence had not, and the authors forgive it a good deal for that.

11 CONCLUSIONS

The Departments report as follows.

- The two posts carried the same load: nineteen to thirty-two attackers to each defender, on the published figures, at both. 'Forty to one' is outside the tolerance of the record.
- The record of Rorke's Drift is loose on every quantity but one. Defenders, attackers, hours, wounded and Zulu dead all vary between reputable sources by six to forty-three per cent. Seventeen British dead, counting two who died of wounds, is the one figure on which the accounts agree.
- Both defences were engineering before they were fighting. Dalton worked out that the garrison could not outrun the enemy; Chard put three feet of bags on six feet of rock; the biscuit-box bulkhead let the post lose the hospital and live. Quinlan dug a week early and ranged his mortars. In each case the deciding work was done before the first shot.
- The length of the perimeter at Rorke's Drift is not reliably known, the surviving plans disagree, and no figure for rifles to the yard should be trusted, including any the reader finds in a paper less scrupulous than this one.
- Both defences were matters of supply. One fired 19,100 of 20,000 rounds and was relieved in the morning. The other fired everything, drank everything, and was not relieved at all.
- The brew is the third term of the maxim and the one that was forgotten. The engineer at Rorke's Drift left the water cart outside his own wall and recovered it with the bayonet; at Jadotville the water ran out before the courage did. The Department's trial on the Fellows' Lawn repeated the first error exactly.
- The attackers at both were brave men badly used, and get the same respect here as the defenders.
- Britain decorated within the year and partly to cover Isandlwana; Ireland withheld for fifty-five years to cover an operation that had failed elsewhere. Both were wrong, in opposite directions.
- The film is wrong about the regiment, the song, the sergeant, the missionary and Private Hook, right about the rifle and the walls, and does not contain its most famous line.

The Major's ruling. A rifle, a brew and not moving. The Department has now tested the maxim against two cases and a medieval one and finds that it holds, with a rider it had not previously written down: that not moving is a decision, to be taken early by somebody who has done the sum, and that the rifle and the brew are both supply problems. Dalton is to be added to the syllabus. So is the ledge. So, in ordinary type, is the water cart.

The Commandant's ruling. Read the contract. Quinlan read his in a week, did not like it, and dug. The men who sent him had not read it in a year. The Station recommends that any future company be given, before it goes, a statement of what it is for, a line of supply, and a bottle of the necessary, in case the first two fail.

Joint verdict. Two structures, loaded alike, neither failed. One was thanked too quickly and the other too late. The authors commend to both services the practice of Colour Sergeant Bourne, who, asked whether he had something to report, gave the source, the bearing and the number, and then stood to.

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Sources were consulted on 18 and 19 September 2026. Where they disagree the paper gives the range and says so. The two colleges, the Department, the station at Baginbun, the authors, the rest of the cast and the trial on the Fellows' Lawn are fictional; the two actions, the people in them and every figure are not. Lines from *Zulu* (1964, screenplay by John Prebble and Cy Endfield) are quoted briefly for the purpose of criticism.

APPENDIX A - SAMPLE CALCULATIONS

A.1 The odds

Rorke's Drift: lowest attackers over highest defenders, $3,000 \div 156 = 19.2$; highest over lowest, $4,500 \div 139 = 32.4$. Jadotville: $3,000 \div 156 = 19.2$ and $5,000 \div 156 = 32.1$. Baginbun: $3,000 \div 100 = 30$. 'Forty to one' needs 6,240 attackers against 156 defenders, or 112 defenders against 4,500.[1,2,3,21,25]

A.2 The tolerance

Half the spread over the midpoint. Defenders: $(156 - 139) \div 2 \div 147.5 = 6$ per cent. Hours: $(12 - 10) \div 2 \div 11 = 9$ per cent. Wounded: $(15 - 10) \div 2 \div 12.5 = 20$ per cent. Attackers: $(4,500 - 3,000) \div 2 \div 3,750 = 20$ per cent. Zulu dead: $(875 - 351) \div 2 \div 613 = 43$ per cent. British killed: 17 in every source; nil.[1,2,3,4]

A.3 The ammunition

Fired: $20,000 - 900 = 19,100$, or 95.5 per cent of the reserve. Per defender: $19,100 \div 156 = 122$ and $\div 139 = 137$. Per hour: $19,100 \div 12 = 1,592$ and $\div 10 = 1,910$. Per Zulu killed: $19,100 \div 875 = 22$ and $\div 351 = 54$. Killed for each defender lost: $351 \div 17 = 20.6$. [1]

A.4 The intervals

Seniority: 14 July 1868 to 28 October 1871 is three years, three months and fourteen days.[11,12]
Hook's cross: 22 January to 3 August 1879, 193 days. Dalton's: to 16 January 1880, 359 days.[13,15]
Jadotville, from September 1961: to 2005, 44 years; to 2016, 55; to 2 December 2017, 56 years and about eleven weeks; to November 2020, 59.[21,22] Baginbun to Rorke's Drift: 1170 to 1879, 709 years. Rorke's Drift (28° 21' S, 30° 32' E) to Likasi, formerly Jadotville (10° 59' S, 26° 44' E), by great circle: 1,972 kilometres; from either to London or Dublin, more than 7,800.[1,32]

A.5 The lawn

A hundred yards of wall in four courses of bags three feet long is 400 bags; at 200 lb, 80,000 lb, or 35.7 long tons.[30] Twelve bags: 2,400 lb, 1.07 tons, and nine feet of wall in four courses of three. Fifteen after the trebuchet: five courses, three feet nine inches. The length and height of a bag are the Department's and are fiction; its weight and the hundred yards are not.

APPENDIX B - THE BURSAR'S CARD

Item	Figure	The Bursar's note
Odds, both posts	19 to 32 to one	The same; he checked it, then had the Department check him
'Forty to one'	Outside the record	Six thousand Zulus or a hundred defenders; nobody offers either
Agreed figures for Rorke's Drift	One	Seventeen
Wall, as built	Three feet of mealie bags	Edible, which he regards as prudent
Wall, as faced	About nine feet	Six of them free, being rock
Length of wall	Not known	He will not pay for a dimension off a sketch
Rounds fired	19,100 of 20,000	Ninety-five and a half per cent; somebody was counting
Rounds for each Zulu killed	22 to 54	He has been told not to be surprised and is trying
The brew, Rorke's Drift	Outside the wall	Recovered with the bayonet; he would have charged the engineer for it
The lawn trial	Twelve bags approved, of 400	Nine feet of wall. He is told this is a bus shelter and has authorised a thirteenth
Jadotville, defenders killed	None	The best figure on the card
Time to decorate, Britain	6 to 12 months	Suspiciously prompt
Time to decorate, Ireland	55 to 56 years	Suspiciously not
The famous line	Not in the film	The real one has a bearing in it; he prefers it

Table B.1: The Bursar's card. He has initialled the line about the biscuits.

APPENDIX C - DEPARTMENTAL NOTE

The Department of Defensive Engineering, Crown Works and Applied Stubbornness was founded in 1066 and reorganised that October. It has taught fortification, field craft and the doctrinal significance of walnut ever since, and holds that a wall is a decision somebody took earlier. The Baginbun Experimental Landing Station of King Diarmait's College was established in 1170 on the headland where a hundred men, a bank, a ditch and some cattle detained three thousand, and has kept the ditch in repair.

The authors served in different armies and did not expect to agree. They found that they agreed about nearly everything: that the man who counts is the one who sees the ground, that he is quite often the engineer or the quartermaster, that nobody should be sent anywhere without being told why, and that an army shows what it is by how it treats the men who held. They record their respect for the garrison of Rorke's Drift, for the amabutho who came against it, for A Company, and for the Indian soldiers who died at the Lufira bridge trying to reach them. The Major has made the tea. The Commandant has brought the other thing.