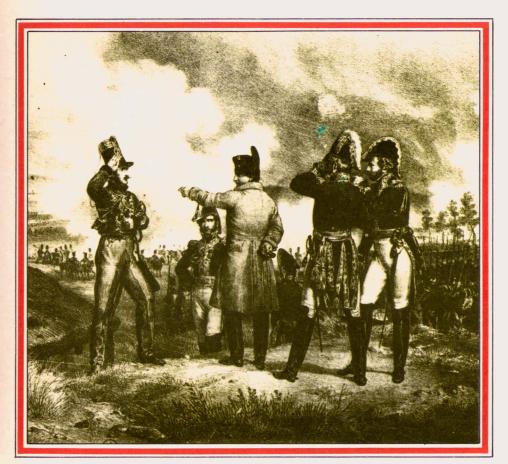
Napoleon at Waterloo



Read This First:

The rules to this game are organized into a set of numbered Sections. Each Section begins with a General Rule (and sometimes a Procedure) followed by a series of specific Cases — decimally numbered paragraphs headed by a boldface sentence containing the main thought of that specific rule. Should you have any questions concerning these rules, please write SPI, enclosing a stamped, self-addressed envelope and phrasing your questions so that they may be answered by a simple sentence, word or number. Mark your query to the attention of Napoleon at Waterloo Rules Question Editor.

- [1.0] How to Start
- [2.0] Equipment
- [3.0] Basic Procedure
- [4.0] Movement of Units
- [5.0] Combat Preconditions
- [6.0] Combat Resolution
- [7.0] Reinforcement
- [8.0] How the Game Is Won
- [9.0] The Grouchy Variant

[1.0] How to Start

GENERAL RULE:

Napoleon at Waterloo consists of a body of rules, a separate group of cardboard playing pieces and a map.

PROCEDURE:

The components should be spread out on a large table with two Players sitting on either side. The die-cut counters should be carefully punched out and carefully segregated as to national group. The Players should skim through the rules by reading only the bold sentence-headlines in the various rules sections. Then the pieces should be placed in their starting positions (as indicated by the four-digit numbers on the faces of the playing pieces). At this point, the Players should review the Sequence of Play and begin a trial game, referring to the details of the rules when they have a question. Note that it is possible to play an enjoyable solitaire game against oneself simply by assuming the role of either Player in proper sequence. To remove the map from the booklet, gently pry open the staples, remove the map, and close the staples again.

COMMENT

Napoleon at Waterloo is a simulation of the battle between the French under Napoleon and the Anglo-Allied and Prussian forces in June 1815.

[2.0] Equipment

GENERAL RULE:

The game equipment consists of the rules, charts, map, and playing pieces.

CASES:

[2.1] The game map represents the terrain on which the battle was fought.

An hexagonal grid is superimposed on the terrain of the map to regulate movement and positioning of the playing pieces. To make the mapsheet lie flat, one should backfold it against its machine-made folds. Players will note that each hexagon (hereafter called "hex") on the map has its own four digit identity number.

[2.2] The Terrain Effects Chart summarizes how the features on the map affect the movement and combat of the playing pieces.

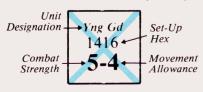
[2.3] The Combat Results Table is the primary means for resolving combat.

Players will need one die from a set of common six-sided dice in order to play the game, or they may use the six numbered chits to provide random numbers.

[2.4] The playing pieces represent the actual military units that took part in the historical battle.

There are five items of information on the front face of each unit. The Player is told what *type* of unit it is (infantry, cavalry, or artillery), and what its 'name' or military designation is. Additionally, the Player is given the *Combat Strength* and the *Movement Allowance* of each unit. The Player is also told which hex the unit starts in or what Game-Turn the unit enters the game as a reinforcement.

SAMPLE INFANTRY UNIT (French)





SAMPLE CAVALRY UNIT (Anglo-Allied)



SAMPLE ARTILLERY UNIT (Prussian)

Game-Turn of Entry in Variant Game

[2.5] Combat Strength is the basic power of a unit when attacking or defending.

The Terrain Effects Chart will detail how this number is affected by combat. The Combat Strength value of a unit is deemed to consist of the printed number of Combat Strength Points.

[2.6] Movement Allowance is the unit's basic ability to move in one Movement Phase.

This ability is expressed in terms of Movement Points. Each hex entered costs a unit one Movement Point.

[3.0] Basic Procedure

The Sequence of Play

The Players take turns moving their units and making attacks. The order in which they take these actions is described in this sequence of play outline. One completion of the sequence of play is called a *Game-Turn*. Each Game-Turn consists of two *Player-Turns*. Each Player-Turn consists of two *Phases*.

THE FRENCH PLAYER-TURN:

Step 1. French Player's Movement Phase.

The French Player may move his units and bring in reinforcements.

He may move as many or as few as he wishes, one after another, within the limitations of the rules of movement.

Step 2. French Player's Combat Phase.

The French Player must attack adjacent Enemy units.

He may perform these attacks in any order he wishes, applying the results immediately as each attack is made.

THE ALLIED PLAYER-TURN:

Step 3. Allied Player's Movement Phase.

The Allied Player may move his units and bring in reinforcements.

He may move as many or as few as he wishes, one after another, within the limitations of the rules of movement.

Step 4. Allied Player's Combat Phase.

The Allied Player must attack adjacent Enemy units.

He may perform these attacks in any order he wishes, applying the results immediately as each attack is made.

These four steps are repeated ten times. The game is then over and the Players determine the victor according to the rules on How the Game is Won. Note that the game may be ended earlier if one Player achieves his victory conditions.

[4.0] Movement of Units

GENERAL RULE:

Each unit has a Movement Allowance number printed on it which represents the basic number of hexes it may move in a single Movement Phase. Each Player moves only his own units during the Movement Phase of his Player-Turn (as outlined in the Sequence of Play).

PROCEDURE:

Units move one at a time, hex-by-hex, in any direction or combination of directions that the Player desires. The Movement Phase ends when the Player announces that he has moved all of his units that he chooses to (or as of the time that he begins to make attacks).

CASES:

[4.1] A unit may *never* exceed its Movement Allowance.

During its Movement Phase, each unit may move as far as its Movement Allowance permits. Basically, each unit spends one Movement Point of its total Allowance for each hex that it enters. Individual units may move less than their Movement Allowance. Units are never *forced* to move during their Movement Phase. Units may not, however, lend or accumulate unused Movement Points.

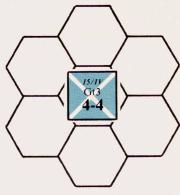
[4.2] Units must spend one Movement Point to enter each hex.

Units may only enter or leave woods hexes through hexsides crossed by roads (even when advancing or retreating due to combat).

[4.3] A unit may *never* enter nor pass through a hex containing an Enemy unit.

[4.4] A unit may *never* end its Movement Phase in the same hex as another Friendly unit.

One or more units may move *through* a hex containing another Friendly unit, but the moving units may never end the Movement Phase in the same hex as another unit. If this should inadvertently happen, the opposing Player gets to choose which of the illegally placed units are to be destroyed (so that only one unit remains in the hex).



[4.5] A unit must stop upon entering a hex that is in the Zone of Control of an Enemy unit.

Whenever a unit enters a hex that is directly adjacent to any of the Enemy Player's units, the moving unit must immediately stop and move no further that Phase. Note that there are six hexes adjacent to most hexes on the map. The six hexes adjacent to an Enemy unit are called the *Zone of Control* of that unit.

A unit may not move so long as it is in an Enemy controlled hex. Only by freeing itself through a combat result may a unit escape the 'freezing' effect of an Enemy Zone of Control

[4.6] Except for French Victory Requirements, units may not leave the map.

If forced to do so by the Combat Results Table, they are eliminated instead. [See Case 8.3]

[5.0] Combat Preconditions

Eligibility Requirements for Attacking Units.

GENERAL RULE:

Each unit has a Combat Strength number printed on it which represents its basic power to attack during its Combat Phase and to defend during the Enemy Combat Phase. Whether or not a unit can attack is strictly a matter of how it is positioned with respect to Enemy units. All units that are in Enemy Zones of Control must attack during their Combat Phase; artillery units not in Enemy Zones of Control but that have Enemy units within the range of their guns may execute a special form of attack called bombardment.

PROCEDURE:

The Player examines the positions of his units, determining which are in Enemy Zones of Control and which artillery units have Enemy units within their range. Attacks are conducted using the Combat Results Table, the die, and the procedures detailed in the section on Combat Resolution.

CASES:

[5.1] A unit that is in an Enemy Zone of Control *must* attack — and every Enemy unit that has a phasing unit in its Zone of Control must be attacked.

[continued on page 15]

[continued from page 10]

If there are several possible combinations, the Player may choose which of his units will attack which Enemy unit — so long as every Enemy unit that is required to be attacked is attacked.

[5.2] No unit may be involved in more than one attack per Combat Phase.

No unit may participate in more than one attack, nor may a given Enemy unit be the object of more than one attack, in a single Combat Phase.

[5.3] More than one unit may participate in a given attack.

As many units as can be brought to bear can participate in the same attack.

[5.4] More than one Enemy unit can be the object of the same attack.

So long as each participating attacking unit could have attacked *every* one of the defending units separately, then all may attack *all* the defending units in a *single* combined attack. [See Case 5.8]

[5.5] A unit's Combat Strength is indivisible.

Units may not use part of their strength in one attack and part in another, neither may they reserve or withhold part of their strength in an attack or defense.

[5.6] An artillery unit not in an Enemy Zone of Control may make a bombardment attack against an Enemy unit two hexes distant.

The important distinction between bombardment and regular attacking is that bombardment attacks can be made *only* by artillery units that are *not* in the Zone of Control of *any* Enemy unit. This bombardment attack *can* be used to satisfy the requirement that a given Enemy unit be attacked (because some other Friendly unit happens to be in its Zone of Control) so long as the other Friendly unit can attack *another* Enemy unit.

[5.7] Except when making an combined attack [see 5.8] bombarding artillery units may attack only a single Enemy-occupied hex.

Even though it may have several Enemy occupied hexes in range, a given artillery unit may bombard only one of them in a single Combat Phase. Note that several artillery units may direct their bombardment at the same hex, in which case their strengths are totalled into one aggregate bombardment attack.

[5.8] An attack may be made which combines the strength of adjacent units with that of bombarding artillery.

The strength of the artillery unit is simply added to that of the adjacent attacking units. Note that if the Enemy is in more than one hex, the contributing bombarding artillery need have only *one* of the Enemy occupied hexes in range in order to add its strength to the attack. This is the exception to Case 5.4.

[6.0] Combat Resolution

How Attacks are Evaluated and Resolved

GENERAL RULE:

An 'attack' is defined as the comparison of the strength of a specific attacking force with that of a specific defending force resolved by the throw of a die in connection with the Combat Results Table. The results may affect either or both the attacked and the defender.

PROCEDURE:

The attacking Player totals the Combat Strength of all of his units that are involved in a given attack and compares the total with the total Combat Strength of the Enemy unit or units being attacked. The resulting comparison is called the Combat Ratio. The Player locates the column heading on the Combat Results Table that corresponds to the Combat Ratio. He rolls the die and cross indexes the die number with the Combat Ratio column and reads the result. The indicated result is applied immediately, before going on to any other attacks. When he has made all of his attacks, the Player announces the end of his Combat Phase.

CASES:

[6.1] The attacking Player must announce which of his units are involved in a given attack against a specific defending unit or group of units.

He must calculate and announce the Combat Ratio, specifying which of his units are participating in the attack, before it is resolved. He may resolve attacks in any order he chooses. Once the die is thrown, he may not change his mind.

[6.2] The calculated Combat Ratio is always determined to represent a specific column of results on the Combat Results Table.

If the Combat Ratio in an attack is higher (or lower) than the highest (or lowest) shown on the table, it is simply treated as the highest (or lowest) column available. Note that the Combat Ratio is always a simplified version of the literal ratio. For example, if *eleven* Combat Strength Points attack *four* Combat Strength Points, the Combat Ratio is simplified to '2 to 1.' Rations are always rounded off in favor of the defender.

The attacker may deliberately *lower* the Combat Ratio, if he so desires, simply by announcing the fact before throwing the die. This is sometimes advantageous (see the Combat Results Table).

[6.3] The abbreviations on the Combat Results Table will indicate that units are either retreated or destroyed.

Ae = Attacker eliminated; all units involved in the attack are destroyed (except bombarding artillery). Defending unit has the option to advance after combat.

Ar = Attacker retreats; all units involved in the attack (except bombarding artillery) are forced to move one hex away from the defender. Defending unit has the option to advance after combat.

Ee = Equal elimination; the defending force is eliminated and the attacking force must lose a number of Combat Strength Points at least equal to the printed value of the defending force. If any attacking units survive, one of them may advance after combat. Bombarding artillery can never suffer from this result.

Dr = Defender retreats; the defending unit is forced to move one hex away from the attacking unit(s). One of the attacking units may advance after combat.

De = Defender eliminated; the defending unit is destroyed. One of the attacking units may advance after combat.

[6.4] Units may be retreated (by their owners) only into 'safe' hexes.

A 'safe' hex is defined as a traversable hex, not in an Enemy Zone of Control. If there is no safe hex available, the unit is destroyed instead. A 'traversable' hex is one that the unit could legitimately enter during a Movement Phase.

[6.5] When the only 'safe' hex is occupied by a Friendly unit, that unit may be *displaced*.

The displaced unit must itself have a hex to retreat to (if not, the original unit is destroyed instead of causing displacement). The displaced unit may itself cause a displacement in a sort of chain reaction of retreats.

Note that a retreating unit may *not* displace an artillery unit that has yet to perform a *required* bombardment attack. A 'required' bombardment attack is one that is made when some other Friendly unit is in the Zone of Control of the Enemy unit being bombarded and that Friendly unit is attacking still another Enemy unit.

[6.6] When a hex is vacated as a result of combat, a single victorious participating unit may advance into that hex.

Such an advance as a result of combat is an option which must be exercised immediately before going on to resolve any further combat in that Phase. A unit is never forced to advance after combat. A unit *may* advance into an Enemy controlled hex (even when advancing directly from an Enemy controlled hex).

[6.7] Movement during the Combat Phase does not expend Movement Points.

Retreats and advances are, technically, not considered to be movement.

[6.8] An artillery unit that is not adjacent to the unit that it is attacking is not affected by adverse combat results.

When an artillery unit is bombarding or making a combination attack (as described in Case 5.8), it is totally unaffected by combat results. Even in the case of an 'Ee' result, the defender is destroyed but the artillery unit is unaffected. Bombarding artillery units may voluntarily retreat after combat when they obtain an 'Ae,' 'Ar,,' or 'Ee' result.

[7.0] Reinforcement

How Additional Units Enter the Game

GENERAL RULE:

In addition to the force with which he starts the game, the Allied Player receives Prussian units during the Movement Phase of Game-Turn Three.

PROCEDURE:

At any time during the specified Movement Phase, newly arriving units may enter the map in non-Woods hexes of hex-column 2300 (i.e., the easternmost hex column).

CASES:

[7.1] When reinforcements arrive on the map, they behave identically to units already on the map.

When reinforcements are placed in an entry hex, the arriving unit must pay one Movement Point for entering that hex. When more than one unit enters in the same place, they enter singly without regard to which one entered first (i.e., it *doesn't* cost subsequent units more to enter the map because they are entering "behind" the first unit). The units move (and they may participate in combat) in the Player-Turn of arrival.

[7.2] Units may never be placed in an entry hex that is Enemy occupied or which is in Enemy Zones of Control.

They may never be placed in an entry hex under conditions which will force a violation of the movement rules (i.e., too many units in the hex at the end of the Movement Phase).

[7.3] The entry of reinforcements may be delayed for as long as the Player wishes.

Should the Player so desire, he may hold back all or part of the reinforcements due him in any given Game-Turn. He should keep a record of any such delayed reinforcements. He need not re-schedule their appearance; they may be brought in at will in any of his subsequent Movement Phases. They must still enter by means of the proper entry hex.

[8.0] How the Game Is Won

Demoralization and the Conditions of Victory

GENERAL RULE:

It is the object of both Players to destroy forty Enemy Strength Points before losing forty Friendly Strength Points. The French Player has the additional objective of exiting seven units off the north edge of the map (through the hexes indicated on the map).

PROCEDURE:

As losses accumulate during the game, the Players should array the destroyed counters off the map in easily counted groups. Players should be especially alert to losses when the forty Strength Point limit is approached.

CASES:

[8.1] The Allied Player wins by destroying forty French Combat Strength Points before losing forty of his own.

If this happens, the game stops *immediately* and the Allied Player is declared the winner.

[8.2] The Allied Player is demoralized *immediately* upon losing forty Combat Strength Points

When demoralized, all Allied attacks (including those made by Prussian units) are *reduced* by one ratio column (for example a three-to-one becomes a two-to-one).

When demoralized, all French attacks are *raised* by one ratio column (for example a one-to-two becomes a one-to-one).

If the Allies destroy forty French Strength Points *after* losing forty of their own, this does *not* demoralize the French nor does it benefit the Allies in any way. The only hope for a demoralized Allied Player is to prevent the seven French units from exiting the map (thereby drawing the game).

[8.3] The French Player wins by demoralizing the Allies *and* exiting seven French units from the map.

The units must exit from the indicated hexes during one or more French Movement Phases. Units may not exit the map as a result of combat (if forced to do so they are considered destroyed instead). French units that exit the map during their Movement Phase are *not* considered destroyed. More than seven French units may exit the map and they may do so before and/or after the Allies lose forty Strength Points. Once the minimum French Victory conditions have been achieved the game stops immediately and the French Player is declared the winner.

[8.4] The game is a Draw if neither side fulfills its victory conditions.

If the French destroy forty Allied Strength Points but fail to exit their seven units before the end of the game or if neither Player destroys forty Strength Points, the game is a draw (which is, in historical terms, an Allied moral victory).

If by some freak chance, both armies reach the forty or greater loss level at the same instant of combat (due to an "Ee" result) then the French Player would win if he had already exited the seven units from the map; otherwise, the Allied Player would be declared the victor.

[9.0] The Grouchy Variant

GENERAL RULE:

For the sake of variety and historical experimentation, the Players may opt (before the start of the game) to include the possibility of the appearance of additional French forces (under the command of Marshal Grouchy) as well as a greater or lesser Prussian reinforcing group.

PROCEDURE:

Before the start of the game, each Player takes a set of chits numbered 1 through 6, turns them face down, selects one at random and keeps it secret until the end of the game. This number is the key number that indicates what reinforcement variant is in effect for that game.

CASES:

[9.1] The additional French and Prussian forces are labelled "Gt5v" on their faces.

This code is shorthand for "possible entry into the game on Game-Turn Five — variant."

[9.2] Any additional French or Prussian forces arrive on the same mapedge and within the same rules as the regular Prussian reinforcement contingent.

[9.3] French Reinforcement Codes

- **1, 2, or 3** indicates no change; i.e., Grouchy does not arrive with any additional forces.
- **4 or 5** indicates that Grouchy arrives with one 5-4, two 4-4's, one 2-5, and one 3-3 on Game-Turn Five.
- 6 indicates all French reinforcements are available on Game-Turn Five.

[9.4] Prussian Reinforcement Codes

- 1 indicates no change from standard game.
- 2 indicates no Prussian reinforcements arrive at all (including the units normally received on Game-Turn Three).
- **3** indicates normal Prussian reinforcements are delayed until Game-turn Five. No additional units are received.
- 4 indicates reduced Prussian reinforcements arrive on Game-Turn Three — only one 5-4, one 4-4, one 3-5, and one 3-3. No other reinforcements available.
- **5** indicates regular Prussian reinforcements arrive on Game-Turn Three. One 5-4, one 4-4, one 3-5, and one 3-3 arrive on Game-Turn Five.
- 6 indicates all regular Prussian reinforcements arrive on Game-Turn Three plus all other available Prussian units arrive on Game-Turn Five.

[9.5] Players should feel free to invent their own variations on these reinforcement options.

The forces that could have arrived on the main field of battle were highly variable and there was a great deal of confusion amongst those in command.

Napoleon at Waterloo Design Credits

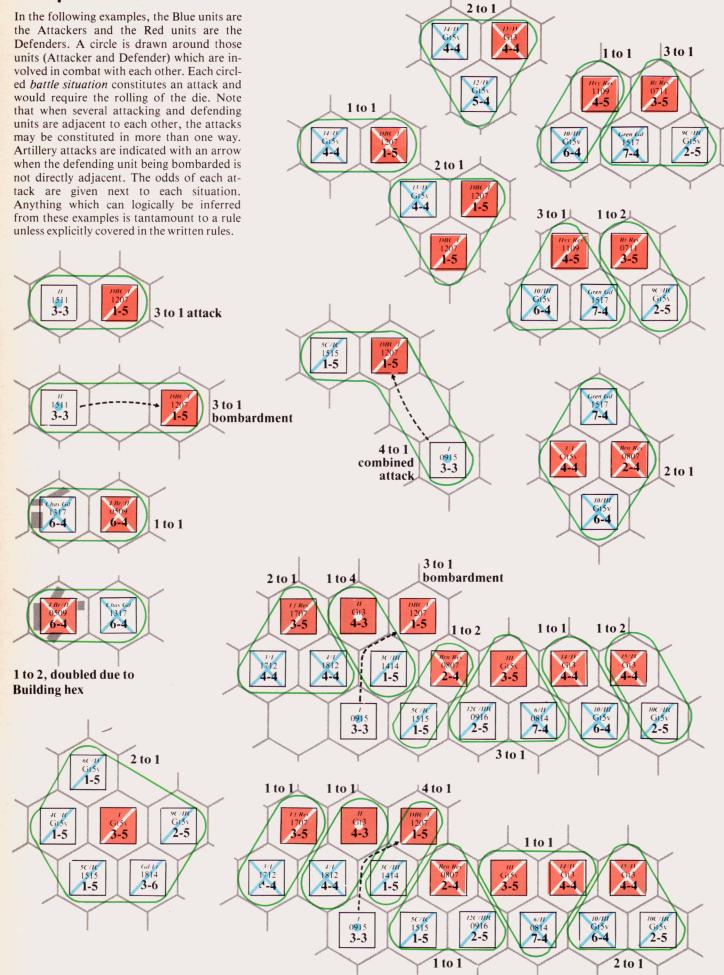
Game Design:

James F. Dunnigan Grouchy Variant by A. A. Nofi Graphics and Rules

Redmond A. Simonsen Editorial and Graphic Production:

Rosalind Fruchtman, Ted Koller, Mike Moore, Manfred F. Milkuhn, Bob Ryer

Examples of Attacks







attacks executed at greater than "6 to 1" are treated as "6 to 1." Attacks executed at worse than "1 to 5" are treated as "1 to 5"

9A θA эΑ Đ₩ 9 Ee Ee Ee 1A 1A Ee Ee Ee 24 9V 9 DL э¥ 9¥ ЭΨ De Dr DL DL 1A 1A b DL DL De DL Dr 1A 3 ЭA 1A IV Э¥ De De DL DL DL De DL JY 9¥ De De DL DL L-G 3-1 1-2 1-2 1-3 9-L L-b L-L b-L

Combat Ratios (Attacker to Defender Strength)

[6.0] Combat Results Table

Clear

Note: Woods and Woods-Road terrain block artillery bombardment *over* such hexes. For example, an artillery unit in hex 0803 could not fire into hex 0805 (but could fire into 0705 and 0905) because of the intervening woods in hex 0804. Artillery may bombard *into* Woods-Road hexes (for example, from 0912 into 0914). Combat: No effect. hex entered. Movement: One Movement Point per

GAME-TURN RECORD TRACK (advance marker to record passage of each Game-Turn)

(see note).







Movement: Entry Prohibited

Combat: Blocking Terrain (see note).





crossed by a road. **Movement:** One Movement Point per hex entered. Woods-Roads may be entered or exited only through a hexside Combat: Defender in hex is doubled in value when calculating Combat ratios. Woods-Road hexes are blocking terrain

[6.0] Combat Results Table

Combat Ratios (Attacker to Defender Strength)

1-5 1-3 De De De Dr Dr De Dr Dr De De De Ae Ae Ar Ar Dr De De Ae Dr Dr Dr Dr Ae Ae Ar Dr Dr Dr De De Ae Ee De Ae Ee Dr Ee Ae Ee Ae Ar Ee Ee De

Attacks executed at worse than "1 to 5" are treated as "1 to 5"; attacks executed at greater than "6 to 1" are treated as "6 to 1."

THE BATTLE OF WATERLOO, 18 June 1815

Dawn of 18 June 1815 found the French Army of the Emperor Napoleon Bonaparte seemingly on the verge of its greatest victory. After a mere twelve days of marching and fighting, the French had succeeded in splitting the Prussian Army under Blucher from Wellington's Army for what looked to be the decisive battle of the campaign. Along a frontage of 15,000 yards, some 72,000 French troops (many of them veterans of long service) supported by 246 guns faced a motley collection of 68,000 British recruits, Hanoverian and Brunswicker levies, and barely-serviceable Netherlander militia feebly supported by a mere 156 guns. In appraising the possibilities of the situation, Napoleon dismissed the coming battle as "an affair of a morning." He was never more wrong.

Despite the brittleness of his army, Wellington had a number of factors working in his favor that day in Belgium. One was the strength of his position on the reverse slope of a slight ridge. Another was the weather. The rains of the previous day and night had left the fields and pastures separating the two armies sodden and slippery, putting the French (who would be advancing) at a disadvantage and delaying the start of the battle for some hours. Most importantly, Wellington had arranged with Blucher for the Prussians (whom Napoleon believed to be retreating eastward after their mauling at Ligny two days previous) to advance in support of the soon-to-be-beleagured Anglo-Allied Army.

The battle opened at 1150 with a cannonade and one-division assault on Hougomont, a walled manor constituting a sort of natural redoubt guarding the approach to the Allied right. Designed as a diversion to draw Wellington's reserves away from the real point of attack, this assault miscarried and had to be supported. As the day wore on, more and more of the French II corps was fed into the assault on this almost impregnable position, and gradually the battle for Hougomont came to take on a life of its own, separate from the rest of the battle. In any event, Wellington fed troops into this isolated battle piecemeal, a company at a time, and it thus failed in its purpose.

By 1334, Napoleon was ready to launch his main effort, an attack by D'Erlon's corps on the Allied center. Four divisions advanced, overrunning the Allied advanced positions. An entire Allied division broke in the face of the onslaught. All seemed to be going as planned. With the commitment of Pic-

ton's 5th division, however, the line was stabilized. After an hour long firefight, the French admitted defeat in the assault and withdrew

Meanwhile, the Prussians had been sighted advancing on the French right and Napoleon was forced both to hurry his attack on Wellington and to detach forces to fight a holding action against the new threat. During the next several hours, the French fought a fierce action against the Prussians around Plancenoit while vainly trying to break the Anglo-Allied line with cavalry alone. Both actions ultimately failed and the emperor on a gambler's throw committed his last reserve,

the Imperial Guard, against Wellington's sererely stressed line in an effort to break the Allied center before the Prussians could organize to crush his right. At 1930 the Guard advanced to be met by the massed fire of the British Guards. After a brief firefight, it was the French who broke, engendering cries of "Le Guard recule!" from the shocked rankers who promptly fled themselves. Seeing the effect of the repulse on French morale, Wellington ordered a general advance which swept the demoralized enemy from the field. The day which had begun with the promise of Napoleon's greatest victory ended in his most decisive defeat. David Ritchie

Images of the counters for this game are provided here as an aid to players in reproducing damaged or misplaced playing pieces.

Napoleon at Waterloo Counter Section Nr. 1 (100 pieces)
Quantity of Sections of this identical type: 1. Total quantity of Sections (all types) in game: 1.

1 Br/1 1010 7-4	5 Br/Res 1708 7-4	3 Br/I 1209 6-4	2 Br/II 0810 6-4	4 Br/II 0509 6-4	6 Br/Res 1509 6-4	2 DB/I 1608 5-4	3 DB/I 0310 4-4	Brn Res 0807 2-4	Det/I 0914 1-4
Hvy Res 1109 4-5	Gen Res 1407 4-5	Rt Res 0711 3-5	1.f Res 1707 3-5	1207 1-5	1409 3-3	Reserve 1310 3-3	1110 2-3		
5/11 Gt3 5-4	13/1V Gt3 4-4	14/1V Gt3 4-4	15/1V Gt3 4-4	16/1V Gt3 4-4	Gt3 3-5	Gt3 3-5	Gt3 4-3	Gt3 3-3	
6/II Gt5v 5-4	Gt5v 5-4	Gt 5v 4-4	Gt5v 4-4	Gt5y 3-5	Gt5v 3-5	Gt5v 3-3			
Gren Gd 1517 7-4	6/11 0814 7-4	Chas Gd 1317 6-4	Yng Gd 1416 5-4	2/1 1612 5-4	9/11 1014 5-4	1/1 1513 4-4	3/I 1712 4-4	1812 4-4	5/II 1314 4-4
1517	0814	1317	1416	1612	1014	1513	1712	1812	1314
1517 7-4 19/1V 1315 4-4	0814 7-4 20/1V 1316 2-4	1317 6-4 Gd Hvv 1016 4-5	1416 5-4 Gd L1 1814 3-6	1612 5-4 16/1 2011 2-5 FRE	1014 5-4 2C/II 0514 2-5	1513 4-4 11C/11IC 1015	1712 4-4 12C/IIIC 0916 2-5	1812 4-4 13C/IVE 1714 1-5	1314 4-4 14C/IVG 1813 1-5
1517 7-4 19/11/ 1315	0814 7-4 20/1V 1316	1317 6-4 Gd Hvy 1016	1416 5-4 Gd Lt 1814	1612 5-4 1671 2011 2-5	1014 5-4 2C/II 0514 2-5	1513 4-4 11C/11IC 1015	1712 4-4 12C/IIIC 0916	1812 4-4 13C/IVC 1714 1-5	1314 4-4 14C/IVC 1813