DECISIVE BATTLES OF
THE AMERICAN CIVIL WAR
Volume One. Bull Run to Chancellorsville

Roger Keating and Ian Trout



run 5

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Decisive Battles of the AMERICAN CIVIL WAR

Volume One

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PART ONE
THE GAME ROUTINES

1. INTRODUCTION

Decisive Battles of the American Civil War (Vol 1) recreates six important battles from the first half of the War between the States. The American Civil War lasted four years and its one million casualties reflect the determination and ferocity with which it was fought. Hopelessly outnumbered in terms of manpower and materiel, the thirteen confederated southern states kept their secession hopes alive by dint of commitment, superior leadership and a fair amount of luck.

The American armies which took the field in 1861 were little more than untrained militia, led for the most part by inexperienced officers and clumsily trying to copy the military systems of the major European powers.

Four years later these same armies were a match for any European contemporary. They had evolved new tactics to accommodate the vastly increased effect of musketry on the battlefield. The use of trench warfare so characteristic of the Great War some 50 years later was pioneered by American armies. Railways were used to expedite the flow of supplies and reinforcements to contested areas so that for the first time in the history of warfare, armies could stay in the field almost all year round.

In the end, of course, the Union triumphed. Robert E. Lee's surrender at Appomattox Courthouse in April of 1865 marked the effective end of the Confederacy. The ***Decisive Battles Game System*** has been specifically designed to recreate the battles of this era. Volume 2 will be published in 1988 and will conclude our study of the American Civil War with a further six battles from Gettysburg until war's end.

In addition to a powerful game system, SSG have supported the game with a comprehensive construction kit which we call WARPLAN™ and a unique graphics editor which we call WARPAINT™.

Part One of this manual, ***The Game Routines***, contains an introductory tutorial and explains all you need to know to play the game. Part Two, ***Orders of Battle***, lists the forces contesting each scenario. Part Three, ***The Design Routines***, explains how to use the construction and graphics kits.

The complete package consists of an album, a map, 2 menu cards, a disk, this player's manual and a strip of disk labels.

If this isn't the case, let us know about missing components, or return defective ones, and we'll replace them immediately. If you live in North America, send defective components to our US Office; if you live elsewhere, send them to our Australian Office.

Furthermore, if you have any questions relating to the play of the game, please address them to our Australian Office, regardless of where you live.

2. YOUR FIRST BATTLE

On July 21st, 1861, the first serious battle of the American Civil War took place. In the rolling farmland north of Manassas Junction, Irwin McDowell's newly-raised army was confronted, and eventually routed, by the reinforced Army of the Potomac under the command of Pierre Beauregard.

The first battle of the war will be your first experience with the Decisive Battles Game System. The armies are not large and their internal structure is very simple. The Union army is organized into 4 divisions while the Confederate army is a loose collection of 14 independent brigades. A complete Order of Battle for both sides is given in Part Two of this manual.

In this tutorial, you are going to take command of the Confederate army while the computer controls the Union forces.

As well as this manual, you'll need to have the game map in front of you and to have located the appropriate area for the First Bull Run scenario. Use the start/game menu card appropriate for your computer.

Starting Up

Start up your computer using the procedure given on the start side of the menu card. Menu A (Start Up Menu) appears to the right of the title page. As is the case with every menu in the game, you use the arrow keys to locate your choice from the menu and then type (RET) to select it.

If you select the wrong menu, don't worry. Type (ESC/f1) to return to the previous menu. Hit the right arrow key a few times. Now hit the left arrow key and you'll see the cursor moves in the opposite direction. Every menu works the same way.

If you don't want to listen to the sound effects, type Cntl (S). If you have a black and white monitor, type Cntl (B). Repeat the keystroke to reverse the effect.

Selecting the First Bull Run Scenario

Before we can start play, we have to select the First Bull Run scenario, tell the computer that we will control the South forces, decide which game options we wish to use and whether we will use a handicap.

Use either arrow key to locate the <GAME> line and type (RET) to go to Menu B (Location Select).

Use an arrow key to locate the <SCENARIO> line and type (RET) to go to Menu C (Scenario Menu).

Use an arrow key to locate the <1ST BULL R> line and type (RET) to go to Menu E (Edit Utility). The scenario briefing screen is displayed to the left of the menu window.

Use an arrow key to locate the <EDIT> line and type (RET) to go to Menu N (Game Options). There are three options available when you play the game.

(I). EXPOSED. When the exposed flag is set, all units on the map will be visible at all times. If the exposed flag is not set, only currently sighted units will be visible on the battlefield.

(II). ENHANCED. When the enhanced flag is set, computer controlled forces will be given certain bonuses. For example, unit size, leadership and staff ratings may be increased.

(III). RADIO. When the radio flag is set, you will have automatic communications with every unit in your command. If the radio flag is not set, only those units directly attached to the army HQ and within communications range can be given orders.

For tutorial purposes, we will choose to set the exposed and radio flags but leave the enhanced flag alone. Position the cursor on the <EXPOSED> line and type (RET). An *Options in Effect* box has appeared below the menu window showing that the exposed flag has been set. The cursor will return automatically to the <CONTINUE> line. Select the <RADIO> line to add this flag to the options box then select <CONTINUE> to go to Menu F (Handicap Utility).

Since this is only a tutorial, we will give ourselves a break. The handicaps below the <NO EFFECT> line benefit the South, those above benefit the North. The effect of a handicap is to modify the victory point awards, it does not affect the artificial intelligence nor the composition of the forces.

Use an arrow key to locate the <MAJOR> South line and type (RET) to go to Menu G (Player Select). Locate the <SOUTH> line and type (RET). The cursor has been thrown into the briefing screen and you have the opportunity to change

the commanders' names. Do this if you wish, otherwise type (RET) until you get back to Menu E (Edit Utility).

Have a last look at the briefing screen and you'll see the South has a major handicap advantage, the North forces will be run by the computer and exposed and radio flags are set.

Use an arrow key to locate the <START> line and type (RET) to go to Menu H (Game Master).

That's the preliminaries over with. We're just about ready to play.

Turn your menu card over to the game side.

The First Turn

This tutorial is a brief introduction as to how the game plays. It is not intended to be a description of everything that can happen. Chapter 4 will describe in detail the full use of each menu. Once you have some experience with the game menus, we recommend you read Chapter 5 for an explanation of the major game systems controlled by the computer.

Back to Menu H. A current turn briefing appears above the menu window. The date is July 21st, 1861, it is 6am and this is the first of the fourteen turns in the game. Below the menu window you can see it is daylight and the weather is clear.

In the bottom centre of the map is the town of Manassas. Five Confederate brigades can be seen to the north. Your army HQ is at Manassas. Don't worry that you can't see it yet; you are still asleep and it won't be until turn 2 that your HQ appears.

The <NORTH> and <RUN 5> lines in the menu have been overprinted with a solid bar to show that you cannot access them. The solid bar will disappear from the <RUN 5> line after the <SOUTH> line has been accessed. This is to guard against accidentally selecting <RUN 5> before issuing your orders. The <NORTH> line will always be overprinted during the game. The computer does not want you to see what it is doing!

Locate the <SOUTH> line and type (RET). This brings up Menu 2 (Operations Master). Your choices here are <PERSONAL>, <COMMANDS>, <ORDERS>, <RESIGN> and <MAP WALK>.

The map has not changed, just the information above and below the menu window. Above the menu window you can see the army I.D. Johnson is Beauregard's second in command. The accompanying icon shows what the Army HQ will look like on the map. Below the menu window you are given a casualty and victory point summary. Obviously, there are no losses yet. The VPs show what your score would be if the game was to end at this moment.

The <PERSONAL>, <COMMANDS> and <ORDERS> lines are over-printed with a solid bar because you are not present on the battlefield this turn. You will wake

up in time to command your army next turn. The computer will direct your troops until you are able to command them yourself. Type (ESC/f1) to go back to menu H and then select <RUN 5> to activate the turn.

There will be a flurry of activity from the Union forces near Centreville. One or two of your brigades may redeploy slightly.

The Second Turn

Back to Menu H again. It is now turn 2 (7am). Select the <SOUTH> line. You will see that the <COMMANDS> line is still over-printed with a solid bar. This is because you have no corps or division HQs to give orders to.

REVIEWING YOUR FORCES. Before issuing orders we'll examine the battlefield, the objectives and the enemy forces.

Select the <MAP WALK> line to go to Menu 3. The screen has centered on a hollow, flashing cursor. Use the arrow keys, the I,J,K and M or the 1-6 keys to move the cursor over the map. The map will scroll once the cursor reaches the edge. Type (0) to centre the screen on the cursor.

At the very bottom of the information panel, you will see a three-part icon display. From left to right this shows you the type of terrain in the hex, which sections of the map are in use for this scenario together with the relative position of the cursor and which side currently controls the hex. The name of the terrain type appears immediately above the display.

Move the cursor to Centreville. Centreville is an objective. Its name appears above the terrain type name and its victory point details are described. Move the cursor to any one of the Union brigades on the road to the stone bridge. The icons at the top of the information panel tell you it is an infantry brigade while below that you are told its formation and condition.

Type (RET) to bring up the map walk menu. Select <ROADS>; all roads are removed from the map. Type (RET) to bring up the menu again then select <ROADS> to replace the road network.

<CONTROL> allows you to see which side controls a particular hex. <CLEAR> removes all units on the map so you can see the terrain underneath.

Move the cursor to the Confederate brigade defending Ball's Ford. This is Cocke's infantry brigade. The information provided is mostly self explanatory; more details are available in Chapter 5.

OPERATIONS. Go back to menu 2. The <PERSONAL> line is the place where you must decide where to put your army HQ and how personally involved you want to get in the battle. Select<PERSONAL>. Below you menu window you will see that both yourself (P.G.T.Beauregard, that is) and General Johnson are OK. In the battle you could get captured, wounded or even killed!

Select <PROFILE> and you will be presented with the four profiles you may choose from. You may change your profile each turn. Your profile will not change from turn to turn unless you enter this menu and change it. You always begin with the default value set to <SENSIBLE>. The words here mean pretty much what they say. Heroic will inspire all troops within four hexes of your position while increasing the likelihood of a nasty accident. Cautious will keep you safe and sound but the effect on your men may prove disastrous. For this tutorial, keep your profile on <SENSIBLE>.

Select <MOVE HQ>. This is the mechanism by which you move your HQ around the map. <STAND> tells the army HQ to remain exactly where it is. <CURSOR> gives you access to the cursor so that you can use the I,J,K,M keys, the arrow keys or the 1-6 keys to move your HQ to the location of your choice. Note that you will not be allowed to select an enemy controlled hex as your destination.

<CONTROL> directs the army HQ to move as quickly as possible to a friendly corps HQ for the purpose of placing it under direct command. Since there are no Confederate corps at First Bull Run, this option has been over-printed by a solid bar. <OBJECTIVE> allows you chose an objective as the destination for the army HQ, using either the arrow keys or the name routine.

Since history tells us that McDowell is crossing Bull Run at Sudley Springs, we will use our foresight to prepare a tough reception for him around New Market. Select <OBJECTIVE>, cycle through the arrow keys until you locate New Market and then type (RET).

Now that the personal matters have been taken care of, it's time to give orders to your brigades. Type (ESC/f1) until you get back to Menu 2 and then select <ORDERS>.

Because the radio flag is set, you have communications with all of your brigades. Use the arrow keys to cycle through them. You may wish to compare the on-screen displays with the Order of Battle printed in Part Two of this manual.

Defending Union Mill's Ford is Ewell's brigade. His last order appears below his I.D. box; i.e. he has been ordered to defend the Union Mills Ford objective. Locate his brigade using the arrow keys and type (RET) to bring up the manoeuvre order menu. The <MAP WALK> option is exactly the same as the routine in Menu 2.

You may give Ewell's brigade any one of 5 orders. At the moment there is no need to change Ewell's orders.

Locate the following brigades and give them all <REGROUP> orders. This tells them to go the the current destination of the army HQ; i.e. to New Market. The brigades are Bee, Early, Bartow, Jackson and Holmes. These are the men we will use to stop the Federals.

Go back to Menu H and select <RUN 5> to execute the turn.

The Third Turn

Select <ORDERS> from menu 2. By now, Evans brigade defending the Stone Bridge has probably started a fight with some brigades from Tyler's division. Locate Evans brigade and type (RET). If he is engaged, then you will get the engaged order menu.

There are 4 combat choices. Evans will have already decided what he is going to do. Outnumbered, he will almost certainly withdraw. This is a sensible thing to do when faced by superior numbers so don't change his order. Options which for one reason or another are not currently available will be over-printed with a solid bar.

No-one will have reached New Market yet, so just make sure that the 5 brigades you gave regroup orders to haven't changed them and then select <RUN 5>.

The Game Plan

Hunter and Heintzelman's divisions have arrived on the battlefield. Their lead brigades may have even crossed Bull Run. It's time to deploy your forces to meet them. Bee and Bartow's brigades should be at New Market. <SELECT> deploy from the manoeuvre order menu and you will get control of the indicator cursor.

You may move the brigade one hex in any direction you chose. Use the arrow keys to select the direction, then type (RET) to confirm it. Deploy the brigades so that they form a line at right angles to McDowell's path.

Experiment with both the manoeuvre and engaged orders. Later on the battle you may wish to send a couple of brigades on an offensive push to Centreville using the <OBJECTIVE> order.

On to Washington!

3. THE TYPES OF GAME MENUS

The order menus which drive the game can be divided into four types.

(a) Branch Menus - These menus signpost the route to other menus [2,4,7,9]. Note that most of them also provide some information.

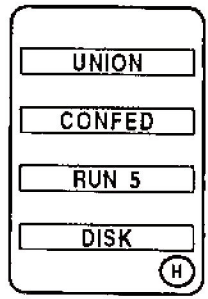
(b) Information Menus - These menus provide specific information on the various forces and functions in the game [3].

(c) Action Menus - These menus are the centre of the game system. All of the orders used in the game are given through them [5,6,8,10,11].

(d) Single Function Menus - [1].

4. THE GAME MENUS DESCRIBED

Menu H (Game Master)



This screen always appears at the beginning of each turn. It is common to both players. It is the first screen you will see after completing the scenario selection details and choosing <START>.

In the four lines of text above the menu window, you are told the date, the time of day, the current turn number and the total number of turns in the game.

Below the menu window you are told whether it is daylight, dawn, dusk or night and the weather condition.

Menu 1 (Save Game Utility)

This is a single function menu which allows you to load or save a game or to format a save game disk. Use the arrow keys to locate the <DISK> line on Menu H and type (RET). This brings up the save game utility screen which has three options, <LOAD>, <SAVE> and <FORMAT>.

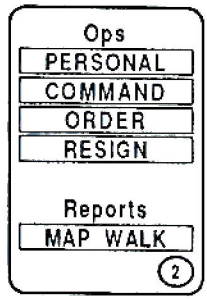
To save a game, locate <SAVE> with the arrow keys and type (RET). If you have only one disk drive you will be asked to insert the appropriate disk and type (RET). You will then see a list of the games on the disk in the large catalog box at the top of the screen. Use the arrow keys to move the highlighted bar to the location in which you wish to save the game, and type (RET). The menu window now displays the <COMMENT> and <SAVE GAME> lines. Choosing <COMMENT> allows you to edit the boxes containing the name of the game and a three line synopsis, which are in the middle of the screen. When you are ready, locate the <SAVE GAME> line and type (RET).

The game will be saved to the highlighted location with whatever name you have chosen for it. Note that the catalog box displays the turn on which the game was saved. This is done automatically. Typing the (ESC/f1) key will now return you to the game. One drive users will be prompted for the appropriate disk.

To load a game, choose <LOAD>. One drive users will be asked for their scenario or save game disk. Use the arrow keys to move the highlighted bar to the desired game location and type (RET). The chosen game will be loaded. Typing (ESC/f1) will now return you to the game.

To format a new save game disk choose <FORMAT>. A warning message will appear and you will be asked to insert the disk to be formatted. Typing (RET) will completely erase any information that was on the disk and provide six unused save game locations. Please exercise some care in choosing this option.

Menu 2 (Operations Master)



This is a branch menu. The information appearing above the menu window identifies the commander of the Army, his second in command if present and the name of the Army. The icon representing the Army HQ appears to the left of the commander's name.

The information below the menu window tells you how many victory points your side has accumulated to date, a leader and troop casualty summary and whether you have more victory points than your opponent at this point in the game.

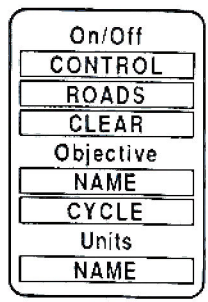
The menu window is divided into two sections. These are **Ops** and **Reports**.

We recommend that you examine the <MAP WALK> menu before issuing instructions, especially while you're learning the game.

Note that this same <MAP WALK> menu is available in several menus to make information easier to access.

The Ops Menus are the decision-making menus in the game.

Menu 3 (Map Walk)



This is an information menu. On selecting <MAP WALK> from Menu 2, 8, 10 or 11, the cursor is thrown into the map. Use the I,J,K,M keys, the arrow keys or the 1-6 keys to march the cursor across the map which will scroll once the cursor reaches the edge. Type (0) to centre the screen on the cursor.

At any time you may type (RET) to bring up the menu window. You may examine the ownership of hexes, examine the terrain by temporarily clearing units from the map or examine the terrain masked by the road network.

You may move the cursor from objective to objective either by naming the objective you wish to go to or using the arrow keys to cycle through them.

You may also move the cursor from unit to unit by naming the unit you wish to go to. The term *unit* describes any combat formation, either brigade or HQ.

Use the arrow keys to select the piece of information you wish to examine and then type (RET). To terminate a display, type (RET) to replace the cursor in the menu window, use the arrow keys to select the display you wish to turn off and type (RET) again to complete the process.

More than one display may be examined at the same time. Be warned, however, that in some cases the information from one display will overprint another. Once

you have finished, type (ESC/f1) to return to Menu 2. All displays will be turned off.

You can (and should) use this menu to get information on enemy units. It is also useful for examining terrain, especially in active portions of the map, and as a source of information on the condition of friendly units.

The information appearing to right of the map describes the contents of the hex identified by the cursor. What information you see depends upon what is in the hex.

The majority of hexes will be empty, nor will an objective be present. For these hexes, you will be told the movement point cost for entering the hex, how much natural cover or protection the hex will offer to an occupant and the expected visibility or sighting into or through the hex. Below this information, the terrain type is named and below this name is a three-part iconic display. In the left-hand compartment you are shown the terrain icon for the hex. In the centre compartment you are shown a schematic summary of the location of the cursor in relation to the whole battlefield. In the right-hand compartment the nationality icon of the side controlling the hex is displayed. See **fig 1.1**.

If an active objective is present in the hex, the middle part of the report will display its details. You are told for which turns the objective is active, how many turns you have held the objective to date and the number of VPs awarded for its control, both on a per turn basis and at end of game. The name of the objective appears above the terrain type name. See **fig 1.2**.

If an enemy unit is present in the hex, the top part of the report will display its details. You are shown an iconic representation of the enemy unit. Underneath this you are told whether the unit is in line or column and whether it appears steady or shaken. A unit is shaken when its current cohesion value is 3 or less unless it occupies a fortification. See **fig 1.3**.

As you can see by moving the cursor around the maps, all of these displays are separate from each other. However, when a friendly unit occupies a hex, all information on the display except for the terrain name and the three-part iconic display are replaced with data on the friendly unit.

A brigade report contains the following information. A boxed display identifies the brigade, its type and its current order. At the top of the screen you are shown the HQ icon of the formation to which the brigade is attached. The name of this HQ, its current order and the objective, if any, it has been directed to are also displayed. Where two objectives are shown, you should read this as the second objective being the real one. The first objective simply defines the line of march.

There are four separate icons directly above the brigade ID. They provide a simple summary of the status of the brigade. From left to right the icons display the brigade type icon, whether the brigade is shattered, whether the brigade is within the communication range of its superior HQ and finally whether an order has been issued to the brigade for this turn.

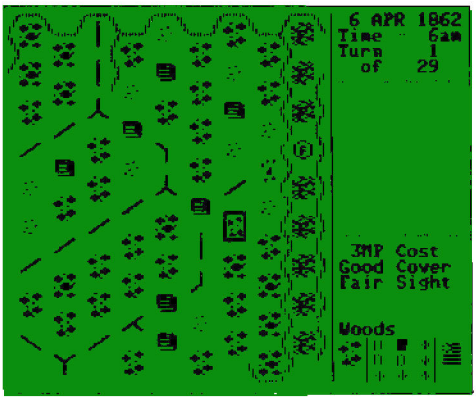


Fig 1.1. Terrain Type Report

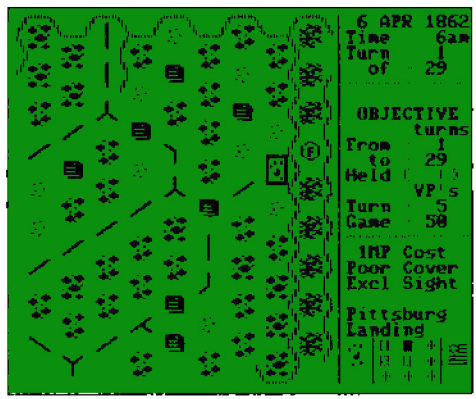


Fig 1.2. Objective Report

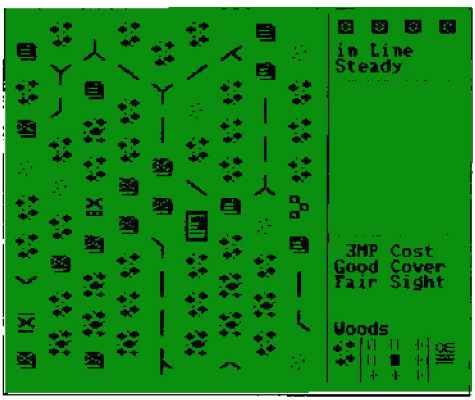


Fig 1.3. Enemy Unit Report

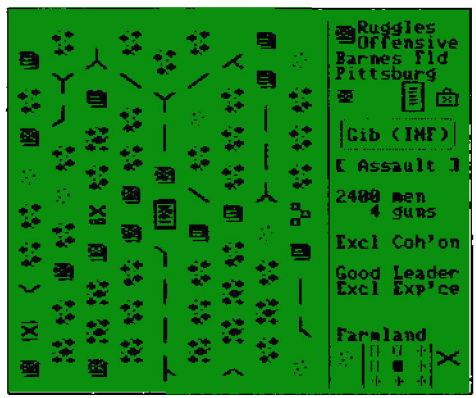


Fig 1.4. Friendly Unit Report

Below the brigade ID are details of the brigade's current effective strength (rounded off to the nearest 100 men), the number of guns attached to the brigade, the current cohesion level and the experience and leadership ratings of the brigade. See **fig 1.4**.

In Summary

A summary of the effects of the <MAP WALK> menu appear below.

Control. All terrain icons are replaced with the Union or Confederate control icon. Hexes containing units do not display a control icon; in every case a hex occupied by a unit will be controlled by that unit. It is difficult to overstate how important hex control is in the play of the game. Units in friendly territory are not usually visible to the opposing player.

Roads. The road network is temporarily removed to reveal the hex types underneath.

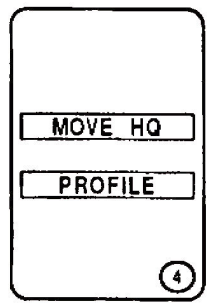
Clear. All units are temporarily removed from the map to reveal the hex types underneath.

Name Objective. A cursor appears above the menu window. Type in the name of the objective you wish to examine. Once the computer has enough letters to distinguish it from other objectives, the screen and cursor will centre on that objective.

Cycle Objective. The cursor appears on the nearest objective and from there the arrow keys are used to cycle the cursor from one objective to the next.

Name Unit. A cursor appears above the menu window. Type in the name of the unit you wish to examine. Once the computer has enough letters to distinguish it from other units, the screen and cursor will centre on that unit.

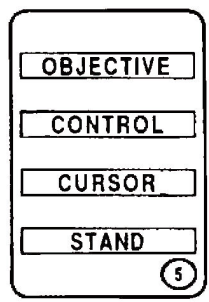
Menu 4 (Army Master)



This is a branch menu. The screen has centered on your present location; i.e. your Army HQ. If the Army HQ has not yet arrived on the battlefield, the screen will centre on its scheduled arrival hex. The Army ID is repeated above the menu window while the personal status of the Army commander and his second in command is given below the window. The army leaders can be OK, wounded, captured or killed.

You use this menu to choose the location you wish to send your Army HQ to and to select the personal profile you wish to adopt for the next hour of the battle.

Menu 5 (Move Army HQ)



This is an action menu. There are four mechanisms by which you can move your Army HQ.

Position the cursor over the <OBJECTIVE> line and type (RET). You will be allowed to name the objective you wish to move your Army HQ to or use the arrow keys to cycle through the available objectives until you locate the one of your choice. Only objectives currently under friendly control may be selected.

Position the cursor over the <CONTROL> line and type (RET).

The pinwheel appears in the menu window and you may select a Corps HQ from it. The Army HQ will move to the Corps HQ. This line will be overprinted with a solid bar if there are no corps under your command.

While an Army HQ occupies a hex adjacent to the Corps HQ and its last move order was to that Corps HQ, it assumes direct command of the formations subordinate to the Corps HQ as though they were its own.

If none of the above mechanisms will allow you move move your Army HQ to its desired location, position the cursor over the <CURSOR> line and type (RET). You will be given control over the cursor appearing on your current Army HQ location.

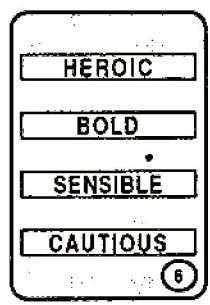
Use the arrow keys, the 1-6 keys or the I,J,K,M keys to move the cursor to the chosen location and then type (RET). Only hexes under friendly control may be selected. Your Army HQ has now been ordered to that location.

If you wish to cancel an Army HQ move or to halt HQ movement, select <STAND>.

Once ordered to move, an Army HQ will take the quickest route to its chosen destination and become stationary once it reaches that location. Remember that the staff effectiveness rating of your Army HQ will be slightly reduced while it is moving. A careful commander will do his best to to keep HQ movement to a minimum.

An Army HQ may directly supercede the orders of any friendly brigade within four hexes of its location as explained in subsequent menu descriptions. Similarly, your Army HQ staff rating is temporarily reduced when enemy brigades are within five hexes of the HQ's location. You should keep these two points in mind when positioning your Army HQ.

Menu 6 (Personal Profile)



This is an action menu. Basically, you must choose the level of personal danger you wish to expose yourself to for the next hour. There are pros and cons for each choice. Your choice will remain active until you change it in a subsequent hour or conditions make it ineligible. The default profile is sensible.

Heroic. You will only be allowed to choose this profile if there is a targeted friendly brigade within four hexes. You and a small escort are considered to have moved into the front line to personally direct the battle.

For the hour immediately following your decision to be heroic, there will be a temporary reduction in your Army HQ staff value. As compensation, all targeted brigades within three hexes of your Army HQ will receive a combat bonus. Leading by example may be the only way to prevent a disaster.

However, the cost of courage is not cheap. You will be exposed to enemy fire and bayonet point. You run the risk of being wounded, incapacitated or even killed. Furthermore, the rest of your Army will be virtually leaderless until you return to

your Army HQ. You will not be allowed to select a heroic profile after the Army commander has suffered either a killed, wounded or captured combat result.

To put this profile in perspective, you should find that in most of your battles you never have to select it!

Bold. You will only be allowed to choose this profile if there is a targeted friendly brigade within four hexes. In this case, you remain at your HQ and have chosen to maintain a high profile for the purpose of stiffening your men.

A small combat bonus is conferred on targeted friendly brigades within four hexes at a cost of some danger to yourself and a slightly reduced staff efficiency

This profile should be selected when all is going well (i.e. you have no need to send off new orders to your subordinates) and you wish to get your men off to a good start.

Sensible. You have chosen to expose yourself to the normal level of danger present on the nineteenth century battlefield. This is roughly equivalent to a 2% chance of being killed or wounded in a normal day's fighting. All brigades within command radius of your Army HQ may be stiffened by your presence or they may ignore you. In any case, your staff effectiveness rating will *not* be affected.

Cautious. The difference between a cautious profile and a sensible profile is small. By selecting a cautious profile you are reducing the risk of personal danger to zero. You also give up all chance of inspiring your men. There is no change to your staff effectiveness rating. You should not confuse cautious with cowardly; I'm sure there are no Schimmelpfennigs (a luckless Union General found hiding in a pig-sty after the Battle of Gettysburg) playing this game.

Which of the two latter profiles you choose will depend on the local situation. It really boils down to how lucky you feel.

Menu 7 (HQ Select)

This is a single function menu. The pinwheel appears in the menu window and you may use the arrow keys to select any of the Corps or Division HQs directly subordinate to your Army HQ. Note that Division HQs subordinate to Corps HQs do not appear in the pinwheel unless your Army HQ is temporarily directing the Corps HQ as explained in Menu 5. Brigades never appear in the pinwheel. The pinwheel bar identifies the HQ which is centered on the screen. The information available for each subordinate HQ is as follows. Examine **figs 1.5 and 1.6**.

The top two lines of the screen show the ID of the HQ and its current command, either offensive, defensive or reserve. A HQ with an offensive command can have up to two objectives displayed beneath its ID. A HQ with a defensive command will have one objective displayed beneath its ID. A HQ with a reserve command will have no objectives displayed beneath its ID.

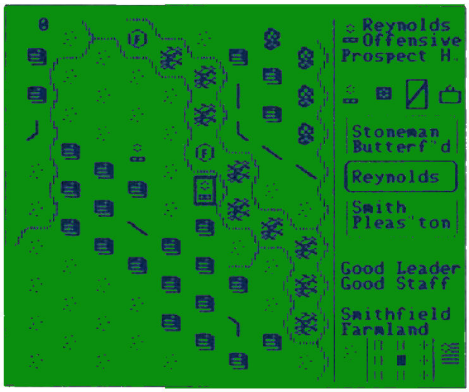


Fig 1.5. HQ Out of Comm.

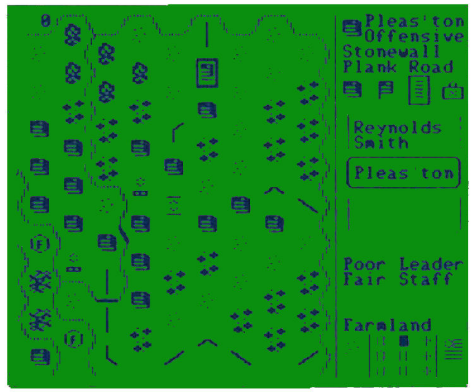


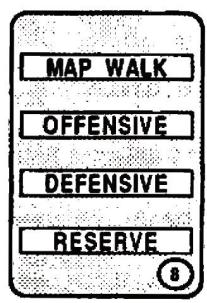
Fig 1.6. HQ In Communication

There are four separate icons directly above the pinwheel. They provide a simple summary of the command status of the HQ. From left to right the icons display the on-screen HQ icon (corps or division), the HQ type (infantry or cavalry), whether the HQ is within the communication range of the Army HQ and finally whether a command has been issued to the HQ for this turn. In the accompanying examples, Stoneman's infantry corps is out of communication with Burnside while Pleasonton's cavalry division is in communication and has received a command this turn. Obviously, a HQ cannot receive a command while it is out of communication.

Below the pinwheel you are told the leadership and staff ratings of the HQ. If the HQ commander has been incapacitated (i.e. killed, wounded or captured) then the leadership line will tell you there is a new commander. You are not told how capable he is!

To issue a command to the selected HQ, type (RET).

Menu 8 (HQ Order)



This is an action menu. It is used to give the HQ its orders for the next hour.

HQs which are *out of communication* with the Army HQ will only be able to access the <MAP WALK> line in the menu. A message in the menu box will inform you that the HQ is out of command. HQs which are *in communication* with the Army HQ will have access to the full range of options in the menu. There are three command types, the effects of which are explained below. Note that the chosen command type will have an effect on both communications and combat.

THE OFFENSIVE COMMAND. An offensive command allows the Army commander to select either a friendly or enemy controlled objective as the destination for the

HQ. Furthermore, an additional objective may be specified to define the line of march.

Position the cursor on the <OFFENSIVE> line and type (RET). You can use the arrow keys or the name routine to locate the chosen objective. Type (RET) to accept the objective. When issuing this command, you must specify the manoeuvre point as the first objective and the intended destination as the second objective. If you don't need to include a manoeuvre point, you must type (RET) twice. Once you have completed this issue command routine, you are returned to Menu 7.

A corps HQ which has been given this command will check its subordinate formations and, where necessary, amend their orders to comply with the new command. How quickly this happens; indeed, whether it happens at all will depend on the leadership rating of the corps HQ. The corps HQ itself will accompany one of its subordinates. Note that the HQ icon is not allowed to enter enemy controlled territory. Remember that to supercede the authority of a corps HQ over its subordinates, you will have to select that corps HQ from Menu 5 and wait until you are adjacent to it.

A division HQ which has been given this command will execute it as soon as conditions allow. A poor division commander may take longer to obey his command than a capable officer. A division in contact with the enemy may take some time to disengage.

Once a formation reaches its destination it will 'listen' and look for enemy units. Should any be detected within 5 hexes, then the formation will march to engage them; i.e. they will *march to the sound of the guns*. Note that formations subordinate to a corps HQ may not all take exactly the same route as specified for the corps HQ nor will they all select the same objective; they will not, however, stray very far away.

If there are no visible or audible enemy, then the formation will deploy to defend its objective(s).

Do not attempt a major redeployment of engaged troops. You will almost certainly end up with a disaster.

THE DEFENSIVE COMMAND. An defensive command allows the Army commander to select a friendly controlled objective as the destination for the HQ. You will not have access to enemy controlled objectives.

Position the cursor on the <DEFENSIVE> line and type (RET). You can use the arrow keys or the name routine to locate the chosen objective. Type (RET) to accept the objective. Once you have completed this issue command routine, you are returned to Menu 7.

The command is implemented much the same as the offensive command except that formations which have reached their destination will not *march to the sound of the guns* but will deploy and defend their objective. There is always a small

chance that a commander who is out of communication with his superior will spontaneously decide to *march to the sound of the guns.*

THE RESERVE COMMAND. A reserve command instructs the subordinate HQ to withdraw from action and rest or simply to wait in place until the appropriate time for its employment.

A corps HQ with a reserve command will usually call off any attacks made by its subordinates. Offensive commands will be changed to defensive or reserve commands depending on circumstances.

A division HQ will instruct its component brigades to withdraw from action where applicable and to recover lost cohesion. Brigade responses are covered in the notes accompanying the description of Menus 10 and 11.

Note that cavalry formations will generally continue in a screening role until a deterioration in their own condition compels a withdrawal.

Do not confuse the HQ reserve command with the brigade reserve order. They are quite different.

SPECIAL NOTE. On the first am turn of any day after the first day of a battle, you may be allowed access to all the corps and division HQs subordinate to the army HQ. See the note in Chapter 6 for more details.

Menu 9 (Brigade Select)

This is an information menu. Brigades are the combat units in the game. All of the actual fighting is done by them. The orders which they can be given are generally dependent upon their current circumstances. The information given here on each brigade is exactly the same as you see when you access the brigade through the <MAP WALK> routine. Use the arrow keys to cycle through the brigades.

When the <RADIO> flag is set for a scenario, all brigades can be accessed by the army HQ from this menu. When the flag is not used (thus recreating a more authentic nineteenth century battlefield), only certain brigades can be accessed by the army HQ through this menu.

These brigades are: all brigades which are directly attached to the army HQ and which are in communication (including brigades directly attached to a corps which is being temporarily superceded by the army HQ); all brigades within 4 hexes of the army HQ which are in communication, no matter to whom they are subordinated.

Note that those brigades within four hexes which are subordinated to a corps or division HQ will display the order which their commander has chosen for them this turn. You may override the order if you wish.

Independent brigades attached directly to the army HQ which are out of communication cannot be accessed at all and you will have to rely on their

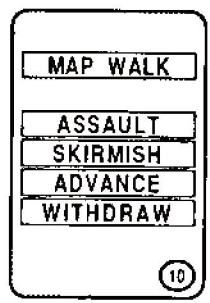
commanders to do the right thing. Note that you may always access every brigade through the <MAP WALK> routine; you just won't be able to tell it to do anything.

Once you have selected the brigade you wish to assign an order to, type (RET) to bring up the brigade order menu. There are two distinct brigade order menus. Which one you get is determined by your proximity to enemy units.

A brigade adjacent to an enemy brigade will always use the engaged order menu. A brigade within two hexes of an enemy brigade will generally use the engaged order menu. The exceptions are when a river, bridge or ford intervenes, when the friendly brigade is unsighted or when a prohibited hex intervenes. A brigade more than two hexes away from all enemy brigades will always use the manoeuvre order menu.

An engaged brigade is distinguished on the screen from a manoeuvre brigade by the fact that the intended target of the engaged brigade is identified by the battle cursor.

Menu 10 (Engaged Order)



This is an action menu. The engaged order menu appears at the bottom of the information panel. Some of the information concerning the brigade has changed.

The top four lines show the type of enemy unit targeted, whether it is in column or line formation (mounted/ dismounted for cavalry, limbered/unlimbered for artillery) and whether it is steady or shaken. A brigade will be shaken if its cohesion is less than 4 unless it is in a fortification.

The four status icons and the brigade ID do not change. There is some additional information concerning the equipment of the brigade. You are told both the type of small arms and the type of artillery used by the brigade.

The <MAP WALK> routine is identical to the routine available through Menu 2. Below the <MAP WALK> line are the four options available to an engaged brigade.

Note that a surprised brigade will have these options replaced with a message that informs him of his bad luck. Only brigades moving in column can be surprised. Brigades which are encamped are always considered to be in column for this purpose. Examine **figs 1.7** and **1.8**.

To select an option, position the cursor on the appropriate line and type (RET). You will be returned directly to Menu 9. The four options are.

ASSAULT. This option is available to all brigades adjacent to their targeted enemy opponent unless a river hex-side intervenes. It is a full-scale brigade charge combined with a volley of musketry. The targeted enemy brigade will almost always fire before the charge goes in so that a well positioned, determined

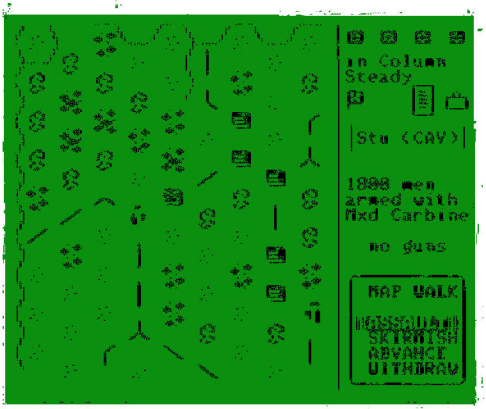


Fig 1.7. Brigade Assault Order

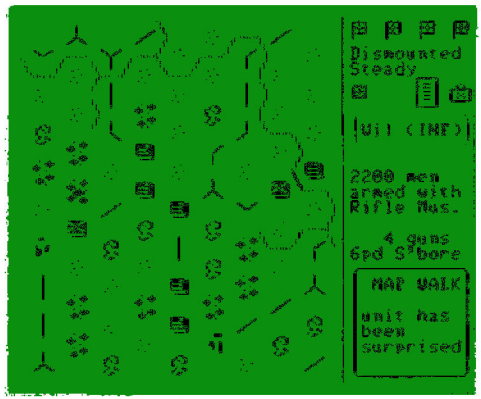


Fig 1.8. Surprised Brigade

defender is very difficult to dislodge on a one-on-one basis. If you are not adjacent to your opponent, you will be denied access to the <ASSAULT> line.

SKIRMISH. This option is always available when the enemy brigade is two hexes away. It may or may not be available when the enemy brigade is adjacent. Your brigade is told to stand and fire at its opponent when he is adjacent or to send a couple of regiments forward to harass your opponent if he is two hexes distant. This is the order which gives you the best chance to fire first, particularly if you did not move in the previous turn. The artillery component of a brigade cannot fire if the brigade moved in the previous turn unless the brigade is cavalry.

If you are adjacent to your opponent, not in a fortification, not separated by a bridge, ford or river hex-side and the combined cover values of your hex and your opponent's hex is less than 4, you will be denied access to the <SKIRMISH> line.

ADVANCE. This option is always available when the enemy brigade is two hexes away. It is also available when your opponent is adjacent and separated from you by a river hex-side. Where possible, the order will move you adjacent to your opponent. The brigade will deliver a volley of musketry but generally not until all stationary brigades have fired first. Use this order to get into position to deliver an assault.

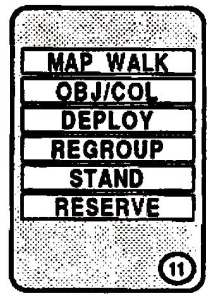
WITHDRAW. This is the only option which is always available to an engaged brigade, regardless of whether it is one or two hexes away. The brigade will attempt to move out of contact with both its opponent and any other enemy present. A cavalry brigade given a withdraw order will fight as though it had a skirmish order but move as though it had a withdraw order.

Menu 11 (Manoeuvre Order)

This is an action menu. The manoeuvre order menu appears at the bottom of the information panel. Some of the information concerning the brigade has changed.

The information above the brigade ID does not change. Below the brigade ID you are told whether the brigade is in line or column (mounted/dismounted for cavalry,

limbered/unlimbered for artillery), its size and artillery strength, the number of movement points available for the coming turn and the maximum number of hexes it may move regardless of its MP allowance.



The <MAP WALK> routine is identical to the routine available through Menu 2. Below the <MAP WALK> line are the six options available to a manoeuvre brigade. Note that a manoeuvre brigade cannot be surprised.

COLUMN/OBJECTIVE. A brigade attached to a division will display the <COLUMN> line, a brigade attached to a corps or army HQ will display the <OBJECTIVE> line.

This means that a brigade attached to a division cannot be given a separate objective; placing it in column will direct it to the current objective of its division HQ. An independent brigade may be given a separate objective.

Position the cursor on the <COLUMN> line and type (RET). You will be returned directly to Menu 9. Position the cursor on the <OBJECTIVE> line and type (RET). The cursor will move to the map and centre on the brigade's last objective. If there is no last objective, the cursor will centre on the nearest objective. Use the arrow keys or the name routine to locate the chosen objective and type (RET). You will be returned directly to Menu 9.

DEPLOY. This order allows the commander a one hex radius in which to reposition the brigade. Position the cursor on the <DEPLOY> line and type (RET). The cursor will move to the map and centre on the brigade. The brigade icon will flash alternately with an indicator icon to show the direction the brigade will move in.

Use the arrow keys to redirect the indicator icon and type (RET) when it is facing in the chosen direction. Once a direction has been chosen, the indicator icon will disappear to be replaced with an action icon over the chosen hex. In the ensuing turn, the brigade will into the hex identified by the action icon.

REGROUP. A brigade with a regroup order will attempt to move as quickly as possible to its superior HQ. Position the cursor over the <REGROUP> line and type (RET). You will be returned directly to Menu 9.

STAND. A brigade with a stand order will stay exactly where it is. Position the cursor over the <STAND> line and type (RET). You will be returned directly to Menu 9.

RESERVE. A brigade must be in reserve to recover lost cohesion. Never miss an opportunity to put a brigade into reserve if its cohesion is fair or worse. Position the cursor over the <RESERVE> line and type (RET). You will be returned directly to Menu 9. Brigades in reserve will not move and are automatically surprised if they enter the engaged order routines.

Brigades with objective/column or regroup orders will move in column (mounted for cavalry, unlimbered for artillery). If they are forced into the engaged order

routines while they have these orders, there is a chance they may be surprised. The higher the leadership and experience, the lower the chance of being surprised. A surprised brigade is considered to have had insufficient time to deploy for combat and suffers accordingly.

Note that there is no way in the game to dig entrenchments during the course of the game. Their effect is abstractly accounted for in the combat routines.

5. THE GAME SYSTEMS

The major systems which operate within the game are sighting (visibility), communications, combat, cohesion and manoeuvre. There is quite a bit of inter-relation between these systems but for ease of clarification they have been discussed separately.

To play the game, all you need to know is what the menus do and how to use them. To understand what is going on behind the scenes and to play the game well, you should read this chapter carefully.

Sighting

After a couple of introductory games, most people will want to play the game with the <EXPOSED> flag switched off. Not knowing where all your opponent's troops are, not knowing how many he has, add a completely new dimension to the play of the game.

The sighting rules work like this. There are two mechanisms by which a unit may be sighted. The first is by the eyeball contact of a friendly unit, the second is by a patrol picket represented in the game by the hex control icons you can observe in the <MAP WALK> routine.

UNIT SIGHTING. Each terrain type on the map has a cover value assigned to it. These values can be found from the <MAP WALK> routine. The computer sums the cover values between each friendly unit and every enemy unit within five hexes, including both the hex occupied by the friendly unit and the hex occupied by the enemy unit.

The sighting value is increased by 4-15 points for each of the following conditions which apply; overcast, rain, snow, dawn, dusk, night, heavy fog and light fog.

The sighting value is increased by 8 for each intervening hex. A random number of 0-7 is added. If the final sighting value is less than 56, the enemy unit is sighted. Furthermore, the maximum sighting range at night or in heavy fog is one hex. As you can see, it is possible for a unit which sights an enemy unit to remain undetected by that enemy unit!

A sighting check is made at the end of each turn and all units which have been sighted by this mechanism are so flagged and become visible on the map.

PICKET SIGHTING. The second mechanism for sighting has nothing to do with enemy units or terrain type. Whenever a friendly unit moves adjacent to an enemy control icon, it is flagged as picketed and immediately becomes visible on the screen. Simultaneously with this, as the friendly unit moves across the map, it switches the control icon of every hex adjacent to its path except hexes across a river, bridge or ford hex-side and hexes adjacent to an enemy unit. For example, you would only see the first unit of a column of troops moving along a road which was enemy controlled at the start of the turn. It would be up to you to decide if the force was a single brigade or a whole corps!

A picket check is made every time a unit moves and the picket flag is set as soon as a positive result is triggered.

UPDATES. At the beginning of each turn, the sighting status of all units is updated. All units with the picketed flag set become unsighted. All units with the sighting flag set become picketted.

Communications

When you play the game with the <RADIO> flag set, there is no need to worry about communications at all. You are always in control of every HQ and brigade in your force. Again, however, after you have played a couple of games, you will want to experience a more authentic battle environment.

Switching the <RADIO> flag off will introduce you to the frustrations and challenges of the pre-twentieth century battlefield. With both the <RADIO> and <EXPOSED> flags switched off, you can be sure of a very exciting experience.

At the beginning of each turn, every brigade and HQ on the board except for the army HQ makes a check with its superior formation. As a result of this check, every brigade and HQ will be either in communication or out of communication. Army HQs are always considered in communication. Troops yet to arrive on the battlefield are always out of communication.

Whether a brigade or HQ is in communication or out of communication is displayed in its status report as described in Menus 7 and 9.

The mechanism by which this judgement is made is as follows. Examine **fig 1.9**. The distance between the unit and its superior unit is measured in hexes and cross-referenced to the communications table. The number obtained is the base chance measured against a random 15 (i.e. a number between 0 and 15) that the unit will be in communication.

There are several variables which modify the base chance before it is checked against the random number. Note that the base chance can never fall below 0; i.e. there is always at least 1 chance in 16 that a unit will be in communication.

TESTING UNIT	RANGE (In Hexes)					
	0-1	2-3	4-7	8-11	12-15	16+
CORPS	15	12	9	6	3	0
DIVISION	15	11	7	3	0	0
BRIGADE	15	10	2	0	0	0

Fig 1.9. Communications Range

TIME OF DAY. Night (-4), dawn, dusk (-2).

WEATHER. Rain, snow, heavy fog (-3), drizzle, light fog (-1).

STAFF RATING. Add the staff value of the testing unit's HQ.

CORPS MODIFIERS. Infantry corps (0), cavalry corps (+4)

DIVISION MODIFIERS. Infantry division (0), cavalry division (+6), army HQ (+2), corps HQ (0).

BRIGADE MODIFIERS. Infantry brigade (0), mounted infantry, artillery brigade (+6), cavalry brigade (+8), army HQ (+2), corps HQ (1), division HQ (0).

MISCELLANEOUS MODIFIERS. For army HQs: -2 if enemy brigade within 4 hexes, -1 if moved last turn, -3 three if heroic, -1 if bold; for corps HQs: -1 if enemy brigade within three hexes, -1 if offensive command.

For example, Forest's cavalry brigade attached directly to Johnson's Army of the Mississippi in the Shiloh scenario would have a communication value of 10 if it were 12 hexes distant from the army HQ in a clear weather, daylight turn. (The value is made up as follows - the base value from fig 1.10 is 0; to this add 3 for the HQ staff value, 8 for being a cavalry brigade, 2 for being subordinated directly to the army HQ; subtract 2 because the army HQ is within 4 hexes of an enemy unit and 1 because the army HQ moved last turn.) If the random number is less than or equal to 10, then Forest's brigade will be in communication.

FIRST AM TURN PROVISIONS. On the first move turn of each day after the first day of the battle, there may be a special opportunity to issue commands to corps and division HQs. If there have been 6 consecutive no move turns (i.e. the move value in the briefing routine is set to 0, then an army HQ will be allowed access to all on-map HQs for command purposes. This is to simulate the nightly briefing which would (should) have occurred.

An army commander will have the most control over his forces when his army HQ is not engaged, is stationary and the weather is good. The more you move around, the more closely you get involved in the action, then the more tenuous will be your control over your troops.

You must strike the right balance between committing yourself personally and directing your army efficiently. The player who does this consistently better than his opponent will win.

Combat

After you have issued commands and orders to your troops, the first on-screen events you will witness after selecting the <RUN 5> line are the combat reports. The target unit of each battle is identified by the action icon and all brigades attacking it are identified by indicator icons. See **fig 1.10.**

The information panel describes the battle represented on-screen by the combat icons. The attacker's information always appears above the defender's information.

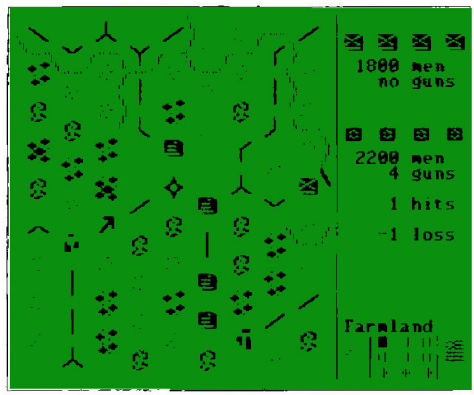


Fig 1.10. Combat Display

The combined strength of all attacking brigades is shown together with the defending brigade's strength. The combat result is shown as a number of hits and a cohesion loss.

The relationship between hits and cohesion is detailed later in this section and an explanation of cohesion provided in a later section. Leaders may be killed, wounded or captured.

Firstly, you need to know who fights who, in what order these fights are carried out and what factors are used to calculate fire and melee values.

TARGET SELECTION. Only brigades select targets. Brigades and HQs may be selected as targets. Each brigade must select one eligible enemy unit within its range as its target. Target selecting priorities are as follows. Note that occassionally they will be violated to reflect the uncertainty of war.

Each brigade will select the closest enemy brigade.

Each brigade will select an *untargeted* enemy brigade in preference to an already targeted enemy brigade.

Each brigade will select a deployed enemy brigade in prefence to an enemy brigade in column.

Obviously, this routine is used only when there is more than one potential target.

In summary, this means that adjacent enemy units will almost always be chosen in preference to more distant enemy units and that multiple brigades cannot gang up on a single brigade unless it is alone.

SEQUENCE OF ATTACK. Each brigade fires and/or melees separately. For convenience of combat reporting, however, all attacks against a single unit are displayed as a combined attack. The screen would look too messy if we did it any

other way. We tried several display systems. What we ended up with is by far the best. There is no distinction between sides in these combat routines.

Not every brigade which selected an opponent in the target selection routine is actually eligible to attack. Artillery brigades which moved in the preceding turn cannot fire. Similarly, the artillery component of non-artillery brigades which moved last turn will not contribute to their brigade's fire value unless the brigade type is cavalry.

All other attacking brigades fall into one of four categories. All brigades within one category will attack before any brigades in subsequent categories will attack. Within a category, every brigade consults a formula to determine the order of attack.

The four categories are.

(I). Infantry and mounted infantry in line, dismounted cavalry (unless with assault orders) and unlimbered artillery which ***did not*** move in the preceding turn.

(II). Infantry and mounted infantry in line, dismounted cavalry (unless with assault orders) and unlimbered artillery which ***did*** move in the preceding turn.

(III). Infantry, mounted infantry and cavalry which has been surprised (i.e. in column).

(Iv). Cavalry with assault orders. For game purposes, this is considered to be a cavalry charge. Note that any brigade with a small arms type which has a range of 0 also fits into this category. There are no such unit types in Civil War battles. A Zulu impi, for example, would have a small arms type with 0 range.

Within each category, the mechanism used to determine the sequence of attack is calculated from the following formula.

Cohesion + 0.5 (lead. + exp.) + brigade type + brigade order + rnd (3)

Where brigade type is artillery (+4), all others (0) and brigade order is skirmish (+6), assault or advance (+2), withdraw (0). Note that a cavalry brigade with a withdraw order is treated as though it had a skirmish order for the purpose of determining the sequence of attack.

In summary, every attacking brigade has been assigned a position in the firing order. Properly deployed, prepared troops will generally fire first. And, as you will see from the firing mechanics, firing first is a tremendous advantage.

THE FIRE VALUE. Each brigade determines its fire/melee value according to the following data.

(I). Artillery Brigades

(a). Add all battery strength points

(b). Add 1 for each point of experience above 4

(c). Add 1 for each point of leadership above 4

(c). Add 1 for each point of leadership above 4

(d). Add rate of fire value

(e). Add effectiveness value (if opponent is adjacent)

(f). Add penetration value (if opponent is not adjacent)

(g). Subtract 2 for every intervening hex

(h). Subtract half of the cover value of the firer's hex (unless in a fortification)

(i). Subtract the cover value of the target's hex (unless in a fortification or the target has an assault order)

(j). Subtract twice the fortification value of the target's hex (unless the target has an assault order)

All artillery brigades have a maximum fire value of 6 in rain, snow, heavy fog or at night. Artillery brigades with a withdraw order may not have a fire value greater than 8.

The fire value of the artillery component of other brigade types is calculated in the same way.

(II). Infantry, Mounted Infantry and Cavalry Brigades

Note that cavalry brigades with assault orders and all brigades with a small arms range of 0 are treated differently.

(a). Add all of the first 8 strength points, half of the next 8 strength points and one quarter of the remaining strength points

(b). Add 1 for each point of experience above 4

(c). Add 1 for each point of leadership above 4

(d). Add 1 for every regiment in the brigade above 4

(e). Add fire value of the small arms type

(f). Add twice the melee value of small arms type (if order is assault)

(g). Subtract half of the cover value of the firer's hex (unless in a fortification)

(h). Subtract the cover value of the target's hex (unless in a fortification or the target has an assault order)

(i). Subtract twice the fortification value of the target's hex (unless the target has an assault order)

Surprised brigades cannot have a fire value greater than 2. Brigades with a withdraw order cannot have a fire value greater than 8. Note that cavalry brigades with a withdraw order are treated as though they had a skirmish order. Brigades with a small arms range of 0 cannot have a fire value greater than 2. Brigades have a maximum fire value of 6 in rain, snow, heavy fog or at night. Brigades firing at a non adjacent opponent have their fire value reduced to 25%.

(iii). Cavalry Brigades with Assault Orders

This group includes all brigades with a small arms range of 0 who are assaulting.

(a). Add all strength points

(b). Add 1 for each point of experience above 4

(c). Add 1 for each point of leadership above 4

(d). Add 1 for every regiment in the brigade above 4

(e). Add twice the melee value of small arms type (if current order is assault)

(h). Subtract twice the cover value of the target's hex (unless in a fortification or the target has an assault order)

(i). Subtract three times the fortification value of the target's hex (unless the target has an assault order)

Brigades have their fire/melee value reduced by 50% in rain, snow, heavy fog or at night.

As a final modifier, the current cohesion rating of a brigade affects its fire value. Cohesion value 6 or 7 = no effect, 4 or 5 = 75%, 2 or 3 = 50%, 1 = no fire value.

All brigades with an assault order are eligible to receive a combat bonus if a heroic army commander is within four hexes. This bonus can be as much as 50% again of the brigade's fire value.

The fire value is the principal factor used in calculating how much cohesion a brigade loses as a result of being fired upon. Cohesion is explained in the following section.

Cohesion

The gradual reduction in a brigade's fighting ability throughout the game is measured through a fluctuating *Cohesion Value*. The cohesion value is decreased as a consequence of taking losses from combat. The cohesion value can only be increased while a brigade is in reserve.

As soon as a brigade's cohesion value drops to 0, then the brigade is removed from play.

As soon as a brigade's cohesion value drops to 2, it shatters. There is no additional effect when a shattered brigade's cohesion value drops to 2.

If the shatter flag in the brigade creation screen is set to 1, then the brigade begins the game in a shattered condition. If the flag is set to 0, then the brigade begins the game in a normal condition.

A normal brigade may recover to a cohesion value of 6. A shattered brigade may recover to a cohesion value of 4. During night turns, normal brigades may

sometimes recover to a cohesion rating of 7, shattered brigades may reach a cohesion rating of 5.

A brigade's cohesion value can only drop as a consequence of sustaining casualties in combat. Each time a brigade is a target for enemy fire, it immediately checks to see if a cohesion value loss has occurred. This loss is implemented immediately.

The procedure for calculating a brigade's cohesion value loss is given below. Note that HQs do not have a vulnerability value. If they are subject to enemy fire, they make an automatic retreat of 2-4 hexes.

STEP ONE. Calculate the target's vulnerability value using the following formula.

Current Cohesion + 0.5 (lead. + exp.) + brigade type + brigade size + rnd 3

where brigade type is artillery (8), infantry (6), mounted infantry, cavalry (4), all surprised brigades, all reserve brigades (0) and brigade size is 1-4 SPs (0), 5-8 SPs (1), 9-16 SPs (3), 17+ SPs (6).

STEP TWO. Compare the fire value with the vulnerability value to obtain the number of hits scored. **Fig 1.11** gives the details.

Each hit scored is one random (1) chance of causing a cohesion loss except against a brigade with a withdraw order or a brigade with the encamped flag set. In the former case it is one random (3) chance of causing a cohesion loss and in the latter case it is an automatic loss of one cohesion point.

FIRE VALUE	VULNERABILITY VALUE			
	0-12	13-18	19-24	25+
0-3	2	2	0	0
4-7	4	3	1	0
8-11	6	4	2	1
12-15	12	6	3	2
16-25	18	8	4	3
26+	24	12	6	4

Fig 1.11. Hit Table

STEP THREE. At the completion of all combat, each brigade fired on makes a cohesion check to see if its current orders are over-ridden. The test is:

Current Cohesion + 0.5 (lead. + exp.) + fortification value + tactical factor + confidence factor + command factor + current order + previous turn + rnd 7

where tactical factor is fired at through frontal hex-sides (4), enfiladed (0), the confidence factor is the number of friendly brigades within three hexes minus the number of enemy brigades within 2 hexes, the command factor is heroic army

leader in range (3), bold army leader in range (2) sensible army leader in range (1), cautious army leader in range (0), current order is assault (2), withdraw (-2).

Note that an account is also made for events which occurred in the previous turn. Friendly brigades within four hexes and enemy brigades within 3 hexes may have an affect. Subtract 1 for each friendly brigade which retreated, 3 for each friendly brigade which shattered and 7 for each friendly brigade which was KIA'd. Add 2 for each enemy brigade either retreated, shattered or KIA'd.

The maximum negative value of this variable is -7. There is no limit as to how large it may be. Finally, the effect of a KIA'd brigade may persist for up to two turns.

(a). If this value is 0 - 6, then brigade is eliminated.

(b). If this value is 7 - 10, then brigade shatters and flees 3-4 hexes to the rear.

(c). If this value is 11 - 15, then brigade retreats 1-2 hexes to the rear.

(d). If this value is 16+, then there is no effect.

Remember that independent of these results, as soon as a brigade's cohesion value drops to 2 it will shatter and as soon as it drops to 0 it will disappear (KIA) for the rest of the game.

Manoeuvre

Once the last combat report has been displayed, the movement routines are activated. The computer determines in which order the units will move. This is based on staff, experience, leadership, cohesion, current order and a small random component.

If necessary, the movement routine will be divided into a series of *pulses*. This is to ensure that every unit has the maximum opportunity to complete its movement without being blocked by friendly units.

The menu window will display the word <running> throughout the duration of the movement routines. The screen will centre on each unit as it moves. Note that there will be no indication of the movement of unsighted units.

The number of movement points available to a unit can be reduced by any of the following; bad weather, time of day, low cohesion, poor leadership or just plain bad luck. Units out of communication are more suspect to losing MPs than units in communication.

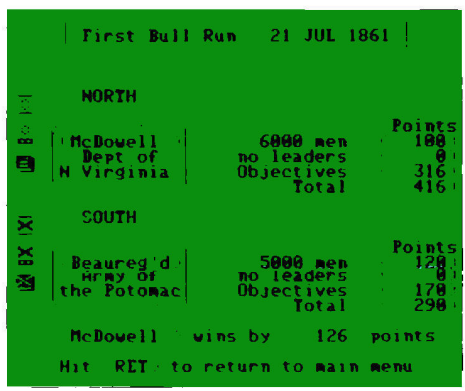


Fig 1.12. Victory Screen

6. WINNING THE GAME

The game will end with the completion of the movement routine on the last turn. The victory screen will appear and summarize the players' performance. **Fig 1.12** shows a typical result.

Additionally, players may elect to end the game at any time by selecting the <RESIGN> line from Menu 2. If this is done, victory points will be displayed as though the game was scheduled to end on that turn.

This example is from the First Bull Run scenario. McDowell's army has earned 100 VPs from enemy troop casulaties, no VPs for enemy leader casualties and 316 VPs for the occupation of objectives for a grand total of 416 VPs.



PART TWO

ORDERS OF BATTLE

The troops taking part in a particular engagement are collectively termed the *Order of Battle*. The Orders of Battle for the Union and Confederate forces in each scenario are listed in the following pages.

Troops have been organized according to their actual employment during the battle. Thus, there is an occasional conflict between our organization and the formal returns of the various armies. (Military commanders must file returns after a battle, much the same as the rest of us must file income tax returns.) For example, in the Chancellorsville scenario, Gibbon's division was left behind at Falmouth to disguise Hooker's plans so that this formation is attached to Sedgwick's Corps for the game rather than Couch's Corps.

They will provide you with a useful summary of unit strengths and organization and should prove very helpful, especially while you are learning the game.

FIRST BULL RUN
Union Forces

DEPARTMENT OF NORTHERN VIRGINIA

Brig-General Irvin McDowell

Tyler's Division

Keyes' Brigade
(2400 inf, 4 guns)
Schenk's Brigade
(2600 inf, 4 guns)
Sherman's Brigade
(2700 inf, 4 guns)

Hunter's Division

Porter's Brigade
(3100 inf, 6 guns)
Burnside's Brigade
(2400 inf, 6 guns)

Heintzelman's Division

Franklin's Brigade
(2100 inf, 6 guns)
Wilcox' Brigade
(2200 inf, 4 guns)
Howard's Brigade
(2500 inf, no guns)

Miles' Division

Blenker's Brigade
(3000 inf, 4 guns)
Davies Brigade
(2900 inf, 4 guns)

Independent

Richardson's Brigade
(2300 inf, 4 guns)
Runyon's Brigade
(1900 inf, no guns)

FIRST BULL RUN
Confederate Forces

ARMY OF THE POTOMAC

Brig-General P. G. T. Beauregard

Independent

Bonham's Brigade
(2900 inf, 4 guns)
Ewell's Brigade
(2300 inf, 4 guns)
Jones' Brigade
(2400 inf, 2 guns)
Longstreet's Brigade
(2600 inf, 2 guns)
Cocke's Brigade
(3100 inf, 4 guns)
Early's Brigade
(2200 inf, 4 guns)
Holmes' Brigade
(1300 inf, no guns)
Kershaw's Brigade
(1100 inf, 2 guns)
Evans' Brigade
(1200 inf, 4 guns)
Jackson's Brigade
(3100 inf, 4 guns)
Bartow's Brigade
(2800 inf, 4 guns)
Bee's Brigade
(3000 inf, 4 guns)
Smith's Brigade
(2600 inf, 4 guns)
Stuart's Brigade
(1800 cav, no guns)

SHILOH
Union Forces

ARMY OF THE TENNESSEE
Brig-General Ulysses S. Grant

McClernand's Division

Hare's Brigade
(2100 inf, 6 guns)
Marsh's Brigade
(1700 inf, 6 guns)
Raith's Brigade
(2100 inf, 4 guns)

W. Wallace's Division

Tuttle's Brigade
(1800 inf, 6 guns)
McArthur's Brigade
(2300 inf, 6 guns)
Sweeney's Brigade
(3100 inf, 6 guns)

L. Wallace's Division

Smith's Brigade
(2000 inf, 4 guns)
Thayer's Brigade
(1700 inf, 4 guns)
Whitelsey's Brigade
(1800 inf, 4 guns)

Hurlbut's Division

Williams' Brigade
(2300 inf, 4 guns)
Veatch's Brigade
(2600 inf, 6 guns)
Laumann's Brigade
(1700 inf, 6 guns)

ARMY OF THE TENNESSEE (Continued)

Sherman's Division

McDowell's Brigade
(1900 inf, 4 guns)
Hildebrand's Brigade
(1700 inf, 6 guns)
Buckland's Brigade
(2000 inf, 2 guns)

Prentiss' Division

Peabody's Brigade
(2700 inf, 6 guns)
Miller's Brigade
(2500 inf, 6 guns)

Independent

Stuart's Brigade
(1700 inf, 4 guns)
Cavalry Brigade
(2300 cav, no guns)
Infantry Brigade
(2700 inf, 6 guns)
Artillery Brigade
(200 crew, 12 guns)
Artillery Brigade
(300 crew, 14 guns)

BUELL'S CORPS (ARMY OF THE OHIO)

McCook's Division

Rousseau's Brigade
(3100 inf, 2 guns)
Kirk's Brigade
(2600 inf, 2 guns)
Gibson's Brigade
(3000 inf, 2 guns)

ARMY OF THE TENNESSEE (Continued)

Nelson's Division

Ammen's Brigde
(1800 inf, no guns)
Hazen's Brigade
(1700 inf, no guns)
Bruce's Brigade
(1800 inf, no guns)

Crittenden's Division

Boyle's Brigade
(2100 inf, 6 guns)
Smith's Brigade
(1700 inf, 4 guns)

Wood's Division

Garfield's Brigade
(1500 inf, no guns)
Wagner's Brigade
(2000 inf, no guns)

SHILOH
Confederate Forces

ARMY OF THE MISSISSIPPI

General Albert S. Johnson
General P. G. T. Beauregard

POLK'S CORPS

Clark's Division

Russell's Brigade
(2600 inf, 6 guns)
Stewart's Brigade
(2300 inf, 6 guns)

Cheatham's Division

Johnson's Brigade
(2000 inf, 6 guns)
Stephens Brigade
(1500 inf, 6 guns)

Independent

Mississippi Cavalry Brigade
(1500 cav, no guns)

BRAGG'S CORPS

Ruggles' Division

Gibson's Brigade
(2400 inf, 4 guns)
Anderson's Brigade
(1500 inf, 6 guns)
Pond's Brigade
(2000 inf, 6 guns)

ARMY OF THE MISSISSIPPI (Continued)

Wither's Division

Gladden's Brigade
(2000 inf, 4 guns)
Chalmer's Brigade
(2200 inf, 4 guns)
Jackson's Brigade
(2100 inf, 6 guns)

HARDEE'S CORPS

Independent

Shaver's Brigade
(2000 inf, 6 guns)
Cleburne's Brigade
(2600 inf, 16 guns)
Wood's Brigade
(1900 inf, 4 guns)

BRECKENRIDGE'S CORPS

Independent

Trabue's Brigade
(2300 inf, 12 guns)
Bowen's Brigade
(1600 inf, 10 guns)
Statham's Brigade
(2000 inf, 6 guns)

Independent

Forest's Brigade
(2200 cav, 4 guns)

SECOND BULL RUN
Union Forces

ARMY OF VIRGINIA
Maj-General John Pope

SIGEL'S CORPS

Schenk's Division
Stahel's Brigade
(1900 inf, 6 guns)
McLean's Brigade
(1600 inf, 6 guns)

Steinwehr's Division
Koltes' Brigade
(1200 inf, 4 guns)

Schurz' Division
Bohlen's Brigade
(900 inf, 6 guns)
Kryzanowski's Brigade
(1000 inf, 4 guns)

Independent
Milroy's Brigade
(1500 inf, 4 guns)
Beardsley's Brigade
(1000 cav, no guns)

MCDOWELL'S CORPS

King's Division
Hatch's Brigade
(1900 inf, 6 guns)
Doubleday's Brigade
(1500 inf, 4 guns)
Patrick's Brigade
(1700 inf, 6 guns)
Gibbon's Brigade
(1900 inf, 6 guns)

ARMY OF VIRGINIA (Continued)

Rickett's Division
Duryea's Brigade
(2000 inf, 4 guns)
Tower's Brigade
(1600 inf, 6 guns)
Hartsuff's Brigade
(1500 inf, 4 guns)
Thoburn's Brigade
(1900 inf, 6 guns)

Reynold's Division
Meade's Brigade
(2400 inf, 6 guns)
Seymour's Brigade
(2000 inf, 6 guns)
Jackson's brigade
(1800 inf, 6 guns)

Independent
Bayard's Brigade
(1400 cav, no guns)

HEINTZELMAN'S CORPS

Kearny's Division
Robinson's Brigade
(1500 inf, 2 guns)
Birney's Brigade
(2800 inf, 2 guns)
Poe's Brigade
(2200 inf, 2 guns)

Hooker's Division
Grover's Brigade
(2400 inf, 2 guns)
Taylor's Brigade
(2100 inf, 2 guns)
Carr's brigade
(2600 inf, 2 guns)

ARMY OF VIRGINIA (Continued)

PORTER'S CORPS

Morell's Division

Roberts' Brigade
(2000 inf, 6 guns)
Butterfield's Brigade
(1800 inf, 6 guns)

Sykes' Division

Buchanan's Brigade
(2100 inf, 6 guns)
Chapman's Brigade
(2800 inf, 6 guns)
Warren's Brigade
(1300 inf, 4 guns)

RENO'S CORPS

Stevens' Division

Christ's Brigade
(1400 inf, 4 guns)
Leasure's Brigade
(1300 inf, 2 guns)
Farnsworth's Brigade
(1500 inf, 2 guns)

Reno's Division

Nagle's Brigade
(2000 inf, no guns)
Ferrero's Brigade
(2200 inf, no guns)

SECOND BULL RUN
Confederate Forces

ARMY OF NORTHERN VIRGINIA

General Robert E. Lee

LONGSTREET'S CORPS

Anderson's Division

Armistead's Brigade
(2400 inf, 6 guns)
Mahone's Brigade
(1600 inf, 4 guns)
Wright's Brigade
(1700 inf, 4 guns)

D. R. Jones' Division

Toombs' Brigade
(1500 inf, 4 guns)
Drayton's Brigade
(1700 inf, 4 guns)
Anderson's Brigade
(2100 inf, 4 guns)

Wilcox' Division

Wilcox' Brigade
(1800 inf, 6 guns)
Pryor's Brigade
(1500 inf, 6 guns)
Featherston's Brigade
(1600 inf, 4 guns)

Hood's Division

Hood's Brigade
(1900 inf, 4 guns)
Whiting's Brigade
(1700 inf, 6 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Kemper's Division

Corse's Brigade
(2000 inf, 4 guns)
Jenkins' Brigade
(2300 inf, 4 guns)
Hunton's Brigade
(1900 inf, 4 guns)

Independent

Evans' Brigade
(1800 inf, 4 guns)

JACKSON'S CORPS

Taliaferro's Division

Baylor's Brigade
(1200 inf, 8 guns)
Seddon's Brigade
(1200 inf, 8 guns)
Taliaferro's Brigade
(800 inf, 8 guns)
Starke's Brigade
(900 inf, 8 guns)

A. P. Hill's Division

Branch's Brigade
(1900 inf, 4 guns)
Pender's Brigade
(2500 inf, 4 guns)
Thomas' Brigade
(2300 inf, 4 guns)
Gregg's Brigade
(1900 inf, 4 guns)
Archer's Brigade
(1500 inf, 6 guns)
Field's Brigade
(1900 inf, 6 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Ewell's Division

Lawton's Brigade
(2100 inf, 6 guns)
Trimble's Brigade
(1600 inf, 4 guns)
Early's Brigade
(2200 inf, 8 guns)
Forno's Brigade
(1700 inf, 8 guns)

Stuart's Division

Robertson's Brigade
(1200 cav, 4 guns)

ANTIETAM
Union Forces

ARMY OF THE POTOMAC
Maj-General George B. McClellan

HOOKER'S CORPS

Doubleday's Division

Phelps' Brigade
(700 inf, 6 guns)
Hofmann's Brigade
(1000 inf, 6 guns)
Patrick's Brigade
(800 inf, 6 guns)
Gibbon's Brigade
(1000 inf, 6 guns)

Rickett's Division

Duryea's Brigade
(1000 inf, no guns)
Christian's Brigade
(700 inf, 4 guns)
Hartsuff's Brigade
(1400 inf, 4 guns)

Meade's Division

Seymour's Brigade
(1100 inf, 4 guns)
Magilton's Brigade
(1000 inf, 4 guns)
Anderson's Brigade
(700 inf, 4 guns)

SUMNER'S CORPS

Richardson's Division

Caldwell's Brigade
(1400 inf, no guns)

ARMY OF THE POTOMAC (Continued)

Meagher's Brigade
(1400 inf, 6 guns)
Brooke's Brigade
(1300 inf, 6 guns)

Sedgwick's Division

Gorman's Brigade
(1800 inf, 6 guns)
Howard's Brigade
(1700 inf, no guns)
Dana's Brigade
(2000 inf, 6 guns)

French's Division

Kimball's Brigade
(1800 inf, 6 guns)
Morris' Brigade
(2300 inf, 6 guns)
Weber's Brigade
(1800 inf, 4 guns)

PORTER'S CORPS

Morell's Division

Barnes' Brigade
(1700 inf, 4 guns)
Griffin's Brigade
(2100 inf, 6 guns)
Stockton's Brigade
(2000 inf, 4 guns)

Sykes' Division

Buchanan's Brigade
(1800 inf, 4 guns)
Lovell's Brigade
(1100 inf, 4 guns)
Warren's Brigade
(500 inf, 4 guns)

ARMY OF THE POTOMAC (Continued)

FRANKLIN'S CORPS

Slocum's Division

Torbert's Brigade
(1600 inf, 6 guns)
Bartlett's Brigade
(1600 inf, 4 guns)
Newton's Brigade
(1600 inf, 6 guns)

Smith's Division

Hancock's Brigade
(2300 inf, 6 guns)
Brook's Brigade
(2000 inf, 6 guns)
Irwin's Brigade
(1700 inf, 6 guns)

BURNSIDE'S CORPS

Wilcox' Division

Christ's Brigade
(1400 inf, 6 guns)
Welsh's Brigade
(1700 inf, 6 guns)

Sturgis' Division

Nagle's Brigade
(1400 inf, 4 guns)
Ferrero's Brigade
(1700 inf, 6 guns)

Rodman's Division

Fairchild's Brigade
(1000 inf, 6 guns)
Harland's Brigade
(2300 inf, 6 guns)

ARMY OF THE POTOMAC (Continued)

Scammon's Brigade

Ewing's Brigade
(1000 inf, 6 guns)
Crook's Brigade
(2100 inf, 6 guns)

MANSFIELD'S CORPS

Williams' Division

Crawford's Brigade
(2500 inf, 6 guns)
Gordon's Brigade
(2300 inf, 4 guns)

Greene's Division

Tynedale's Brigade
(1000 inf, 4 guns)
Stainrook's Brigade
(800 inf, 4 guns)
Goodrich's Brigade
(600 inf, 4 guns)

Pleasonton's Division

Farnsworth's Brigade
(1200 cav, 6 guns)
Rush's Brigade
(800 cav, 6 guns)
McReynolds' Brigade
(700 cav, 6 guns)
Davis' Brigade
(700 cav, 6 guns)

Independent

Reserve Artillery Brigade
(300 crew, 22 guns)
Reserve Artillery Brigade
(200 crew, 12 guns)
Reserve Artillery Brigade
(300 crew, 18 guns)

ANTIETAM
Confederate Forces

ARMY OF NORTHERN VIRGINIA
General Robert E. Lee

LONGSTREET'S CORPS

McClaws' Division
- **Kershaw's Brigade** (800 inf, 6 guns)
- **Sander's Brigade** (400 inf, 6 guns)
- **Semmes' Brigade** (800 inf, 6 guns)
- **Barksdale's Brigade** (900 inf, 4 guns)

Anderson's Division
- **Cumming's Brigade** (700 inf, 6 guns)
- **Parham's Brigade** (500 inf, 4 guns)
- **Posey's Brigade** (900 inf, 6 guns)
- **Armistead's Brigade** (400 inf, 4 guns)
- **Pryor's Brigade** (700 inf, 4 guns)
- **Wright's Brigade** (700 inf, 4 guns)

D. R. Jones' Division
- **Toombs' Brigade** (700 inf, 4 guns)
- **Drayton's Brigade** (500 inf, no guns)
- **Garnett's Brigade** (300 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)
- **Kemper's Brigade** (500 inf, no guns)
- **Walker's Brigade** (800 inf, 4 guns)
- **Anderson's Brigade** (800 inf, no guns)

Walker's Division
- **Manning's Brigade** (2200 inf, 6 guns)
- **Ransom's Brigade** (1700 inf, 6 guns)

Hood's Division
- **Wofford's Brigade** (900 inf, 4 guns)
- **Law's Brigade** (1200 inf, 4 guns)

Independent
- **Reserve Artillery Brigade** (300 crew, 16 guns)
- **Reserve Artillery Brigade** (300 crew, 18 guns)

JACKSON'S CORPS

Lawton's Division
- **Douglas' Brigade** (1300 inf, 4 guns)
- **Early's Brigade** (1200 inf, 4 guns)
- **Walker's Brigade** (800 inf, 4 guns)
- **Hays' Brigade** (500 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

A. P. Hill's Division

Branch's Brigade
(800 inf, 6 guns)
Gregg's Brigade
(1200 inf, 4 guns)
Brokenborough's Brigade
(600 inf, 4 guns)
Archer's Brigade
(400 inf, 4 guns)
Pender's Brigade
(700 inf, 4 guns)

J. R. Jones' Division

Warren's Brigade
(700 inf, 4 guns)
Johnson's Brigade
(500 inf, 4 guns)
Starke's Brigade
(600 inf, 4 guns)

D. H. Hill's Division

Ripley's Brigade
(1400 inf, 4 guns)
Rodes' Brigade
(900 inf, 4 guns)
McRae's Brigade
(800 inf, 4 guns)
Anderson's Brigade
(1200 inf, 6 guns)
Colquitt's Brigade
(1400 inf, 4 guns)

Stuart's Division

Hampton's Brigade
(1800 cav, 4 guns)
Lee's Brigade
(1800 cav, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Independent

Evans' Brigade
(500 inf, 4 guns)
Munford's Brigade
(800 cav, 4 guns)
Reserve Artillery Brigade
(300 crew, 22 guns)
Reserve Artillery Brigade
(300 crew, 20 guns)

FREDERICKSBURG
Union Forces

ARMY OF THE POTOMAC
Maj-General Ambrose E. Burnside

COUCH'S CORPS

Hancock's Division
Caldwell's Brigade
(2200 inf, no guns)
Meagher's Brigade
(1500 inf, no guns)
Zook's Brigade
(2000 inf, no guns)

Howard's Division
Sully's Brigade
(2300 inf, no guns)
Owen's Brigade
(900 inf, no guns)
Hall's Brigade
(1100 inf, no guns)

French's Division
Kimball's Brigade
(2200 inf, 6 guns)
Palmer's Brigade
(1000 inf, 6 guns)
Andrews' Brigade
(1600 inf, 6 guns)

WILLCOX' CORPS

Burns Division
Poe's Brigade
(1400 inf, 6 guns)
Christ's Brigade
(1500 inf, 4 guns)
Leasure's Brigade
(1200 inf, 4 guns)

ARMY OF THE POTOMAC (Continued)

Sturgis' Division
Nagle's Brigade
(3000 inf, 6 guns)
Ferrero's Brigade
(2400 inf, 4 guns)

Getty's Division
Hawkins' Brigade
(1500 inf, 6 guns)
Harland's Brigade
(1400 inf, 6 guns)

STONEMAN'S CORPS

Birney's Division
Robinson's Brigade
(1600 inf, 4 guns)
Ward's Brigade
(1500 inf, 6 guns)
Berry's Brigade
(1500 inf, 6 guns)

Sickles' Division
Carr's Brigade
(1500 inf, 4 guns)
Hall's Brigade
(1400 inf, 4 guns)
Revere's Brigade
(1500 inf, 6 guns)

Whipple's Division
Piatt's Brigade
(2200 inf, 6 guns)
Carroll's Brigade
(800 inf, 6 guns)

ARMY OF THE POTOMAC (Continued)

BUTTERFIELD'S CORPS

Griffin's Division

Barnes' Brigade
(2600 inf, 6 guns)
Sweitzer's Brigade
(3000 inf, 4 guns)
Stockton's Brigade
(3000 inf, 4 guns)

Sykes' Division

Buchanan's Brigade
(2300 inf, 4 guns)
Andrews' Brigade
(3100 inf, 6 guns)
Warren's Brigade
(2000 inf, 6 guns)

Humphreys' Division

Tyler's Brigade
(2200 inf, 4 guns)
Allabach's Brigade
(2700 inf, 4 guns)

REYNOLDS' CORPS

Doubleday's Division

Phelps' Brigade
(2300 inf, 6 guns)
Gavin's Brigade
(1800 inf, 6 guns)
Rodgers' Brigade
(2000 inf, 6 guns)
Meredith's Brigade
(2200 inf, 6 guns)

ARMY OF THE POTOMAC (Continued)

Gibbon's Division

Root's Brigade
(1800 inf, 6 guns)
Lyle's Brigade
(1400 inf, 6 guns)
Taylor's Brigade
(1900 inf, 6 guns)

Meade's Division

Sinclair's Brigade
(1400 inf, 6 guns)
Magilton's Brigade
(1400 inf, 4 guns)
Jackson's Brigade
(1700 inf, 4 guns)

SMITH'S CORPS

Brooks' Division

Torbert's Brigade
(2600 inf, 6 guns)
Cake's Brigade
(2700 inf, 4 guns)
Russell's Brigade
(1800 inf, 4 guns)

Howe's Division

Pratt's Brigade
(2800 inf, 6 guns)
Whiting's Brigade
(3000 inf, 6 guns)
Vinton's Brigade
(2700 inf, 6 guns)

Newton's Division

Cochrane's Brigade
(3000 inf, 6 guns)
Deven's Brigade
(2800 inf, 4 guns)
Rowley's Brigade
(2800 inf, 6 guns)

ARMY OF THE POTOMAC (Continued)

Pleasonton's Division

Farnsworth's Brigade
(1200 cav, no guns)
Gregg's Brigade
(1300 cav, no guns)

Independent

Averill's Brigade
(1600 cav, no guns)
Bayard's Brigade
(1900 cav, no guns)

Artillery

11 Reserve Artillery Brigades
(each 200 crew, 16 guns)

FREDERICKSBURG
Confederate Forces

ARMY OF NORTHERN VIRGINIA

General Robert E. Lee

LONGSTREET'S CORPS

McClaws' Division

Kershaw's Brigade
(2200 inf, 4 guns)
Barksdale's Brigade
(1600 inf, 4 guns)
Cobb's Brigade
(1900 inf, 4 guns)
Semmes' Brigade
(1300 inf, 6 guns)

Anderson's Division

Wilcox's Brigade
(1600 inf, 4 guns)
Mahone's Brigade
(1700 inf, 4 guns)
Featherston's Brigade
(1200 inf, 2 guns)
Wright's Brigade
(1000 inf, 2 guns)
Perry's Brigade
(900 inf, 4 guns)

Pickett's Division

Garnett's Brigade
(1200 inf, 4 guns)
Armistead's Brigade
(1300 inf, 4 guns)
Kemper's Brigade
(1200 inf, 2 guns)
Jenkins' Brigade
(1600 inf, 4 guns)
Corse's Brigade
(900 inf, 2 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Hood's Division

Law's Brigade
(1600 inf, 2 guns)
Robertson's Brigade
(1300 inf, 4 guns)
Anderson's Brigade
(1100 inf, 4 guns)
Benning's Brigade
(1200 inf, 2 guns)

Ransom's Division

Ransom's Brigade
(1500 inf, 4 guns)
Cooke's Brigade
(1600 inf, 4 guns)

Independent

Reserve Artillery
(300 crew, 20 guns)

JACKSON'S CORPS

A. P. Hill's Division

Brockenborough's Brigade
(1200 inf, 4 guns)
Gregg's Brigade
(1500 inf, 4 guns)
Thomas' Brigade
(1300 inf, 6 guns)
Lane's Brigade
(1600 inf, 4 guns)
Archer's Brigade
(1500 inf, 4 guns)
Pender's Brigade
(1700 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

D. H. Hill's Division

Rodes' Brigade
(1800 inf, 4 guns)
Doles' Brigade
(1400 inf, 6 guns)
Colquitt's Brigade
(1900 inf, 4 guns)
Iverson's Briagde
(1300 inf, 4 guns)
Grimes' Brigade
(1200 inf, 4 guns)

Early's Division

Atkinson's Brigade
(2300 inf, 4 guns)
Hoke's Brigade
(1300 inf, 4 guns)
Walker's Brigade
(1600 inf, 4 guns)
Hays' Brigade
(1200 inf, 4 guns)

Taliaferro's Division

Paxton's Brigade
(900 inf, 4 guns)
Jones' Brigade
(900 inf, 4 guns)
Warren's Brigade
(1200 inf, 4 guns)
Pendleton's Brigade
(1100 inf, 4 guns)

Stuart's Division

Fitzhugh Lee's Brigade
(1400 cav, 6 guns)
W. H. F. Lee's Brigade
(1700 cav, 6 guns)

Reserve Artillery (300 crew, 18 guns)

CHANCELLORSVILLE
Union Forces

ARMY OF THE POTOMAC
Maj-General Joseph E. Hooker

REYNOLDS' CORPS

Wadsworth's Division
Phelps' Brigade
(1100 inf, 6 guns)
Cutler's Brigade
(1700 inf, 6 guns)
Paul's Brigade
(1200 inf, 4 guns)
Meredith's Brigade
(1800 inf, 6 guns)

Robinson's Division
Root's Brigade
(1200 inf, 6 guns)
Baxter's Brigade
(800 inf, 4 guns)
Leonard's Brigade
(1300 inf, 6 guns)

Doubleday's Division
Rowley's Brigade
(1300 inf, 4 guns)
Stone's Brigade
(1400 inf, 4 guns)

COUCH'S CORPS

Hancock's Division
Caldwell's Brigade
(1200 inf, 6 guns)
Meagher's Brigade
(700 inf, 4 guns)

ARMY OF THE POTOMAC (Continued)

Zook's Brigade
(1300 inf, 6 guns)
Brooke's Brigade
(1400 inf, 6 guns)

French's Division
Carroll's Brigade
(1400 inf, 6 guns)
Hays' Brigade
(1300 inf, 6 guns)
MacGregor's Brigade
(700 inf, no guns)

SICKLES' CORPS

Birney's Division
Graham's Brigade
(2300 inf, 6 guns)
Ward's Brigade
(2100 inf, 6 guns)
Hayman's Brigade
(1600 inf, 6 guns)

Berry's Division
Carr's Brigade
(2000 inf, 6 guns)
Revere's Brigade
(2100 inf, 6 guns)
Mott's Brigade
(1400 inf, 4 guns)

Whipple's Division
Franklin's Brigade
(1100 inf, 6 guns)
Bowman's Brigade
(1100 inf, 6 guns)
Berdan's Brigade
(600 inf, no guns)

ARMY OF THE POTOMAC (Continued)

MEADE'S CORPS

Griffin's Division

Barnes' Brigade
(1000 inf, 6 guns)
McQuade's Brigade
(1500 inf, 6 guns)
Stockton's Brigade
(1600 inf, 4 guns)

Sykes' Division

Ayres' Brigade
(1500 inf, 6 guns)
Burbank's Brigade
(1400 inf, 4 guns)
O'Rorke's Brigade
(1000 inf, 6 guns)

Humphrey's Division

Tyler's Brigade
(600 inf, 4 guns)
Allabach's Brigade
(900 inf, 6 guns)

SEDGWICK'S CORPS

Brooks' Division

Brown's Brigade
(2500 inf, 6 guns)
Bartlett's Brigade
(2000 inf, 6 guns)
Russell's Brigade
(1800 inf, 6 guns)

Howe's Division

Grant's Brigade
(2300 inf, 6 guns)

ARMY OF THE POTOMAC (Continued)

Niell's Brigade
(2600 inf, 4 guns)

Newton's Division

Shaler's Brigade
(2200 inf, 4 guns)
Browne's Brigade
(2900 inf, 6 guns)
Wheaton's Brigade
(2600 inf, 4 guns)

Gibbon's Division

Sully's Brigade
(1500 inf, 6 guns)
Owen's Brigade
(1300 inf, 6 guns)
Hall's Brigade
(1100 inf, 6 guns)

Independent

Burnham's Brigade
(3000 inf, 6 guns)

HOWARD'S CORPS

Devens' Division

von Gilsa's Brigade
(1300 inf, 4 guns)
McLean's Brigade
(1800 inf, 4 guns)

von Steinwehr's Division

Buschbeck's Brigade
(1400 inf, 6 guns)
Barlow's Brigade
(1700 inf, 4 guns)

POTOMAC (Continued)

Pleasonton's Division

Davis' Brigade
(1800 cav, no guns)
Devin's Brigade
(1200 cav, 6 guns)

Averill's Division

Sargent's Brigade
(1500 cav, 6 guns)
McIntosh's Brigade
(900 cav, no guns)

Gregg's Division

Kilpatrick's Brigade
(700 cav, 6 guns)
Wyndham's Brigade
(1100 cav, 6 guns)
Buford's Brigade
(1500 cav, 6 guns)

Independent

2 Reserve Artillery Brigades
(each 300 crew, 18 guns)

CHANCELLORSVILLE
Confederate Forces

ARMY OF NORTHERN VIRGINIA
General Robert E. Lee

JACKSON'S CORPS

A. P. Hill's Division

Heth's Brigade
(1300 inf, 4 guns)
Thomas' Brigade
(1500 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Lane's Brigade
(2600 inf, 6 guns)
McGowan's Brigade
(2400 inf, 4 guns)
Archer's Brigade
(1600 inf, 4 guns)
Pender's Brigade
(2100 inf, 4 guns)

Rodes' Division

O'Neal's Brigade
(2400 inf, 4 guns)
Colquitt's Brigade
(1800 inf, 6 guns)
Ramseur's Brigade
(1800 inf, 6 guns)
Doles' Brigade
(1700 inf, 4 guns)
Iverson's Brigade
(1900 inf, 4 guns)

Early's Division

Gordon's Brigade
(1700 inf, 4 guns)
Hoke's Brigade
(1800 inf, 4 guns)
Smith's Brigade
(3100 inf, 4 guns)
Hays' Brigade
(3100 inf, 4 guns)

Colston's Division

Paxton's Brigade
(1800 inf, 4 guns)
Jones' Brigade
(1700 inf, 4 guns)
Wharton's Brigade
(2500 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Lane's Brigade
(2600 inf, 6 guns)
McGowan's Brigade
(2400 inf, 4 guns)
Archer's Brigade
(1600 inf, 4 guns)
Pender's Brigade
(2100 inf, 4 guns)

Rodes' Division

O'Neal's Brigade
(2400 inf, 4 guns)
Colquitt's Brigade
(1800 inf, 6 guns)
Ramseur's Brigade
(1800 inf, 6 guns)
Doles' Brigade
(1700 inf, 4 guns)
Iverson's Brigade
(1900 inf, 4 guns)

Early's Division

Gordon's Brigade
(1700 inf, 4 guns)
Hoke's Brigade
(1800 inf, 4 guns)
Smith's Brigade
(3100 inf, 4 guns)
Hays' Brigade
(3100 inf, 4 guns)

Colston's Division

Paxton's Brigade
(1800 inf, 4 guns)
Jones' Brigade
(1700 inf, 4 guns)
Wharton's Brigade
(2500 inf, 4 guns)

ARMY OF NORTHERN VIRGINIA (Continued)

Nicholls' Brigade
(1400 inf, 4 guns)

McClaws' Division

Wofford's Brigade
(2200 inf, 6 guns)
Semmes' Brigade
(1900 inf, 6 guns)
Kershaw's Brigade
(2300 inf, 4 guns)
Barksdale's Brigade
(2200 inf, 4 guns)

Anderson's Division

Wilcox' Brigade
(2200 inf, 4 guns)
Wright's Brigade
(1700 inf, 4 guns)
Mahone's Brigade
(1900 inf, 6 guns)
Posey's Brifgade
(1700 inf, 4 guns)
Perry's Brigade
(800 inf, 4 guns)

Independent

Fitzhugh Lee's Brigade
(1400 cav, 6 guns)
W. H. F. Lee's Brigade
(1700 cav, 6 guns)
Reserve Artillery Brigade
(300 crew, 16 guns)
Reserve Artillery Brigade
(300 crew, 18 guns)

PART THREE
THE DESIGN ROUTINES

1. INTRODUCTION

The following notes are meant as a guide to **Warplan**. The information they contain will also provide some insights into how the game works, and should be read at some stage even if you never construct your own scenarios.

Varying an existing scenario is fairly straight-forward and we provide an example of how to do this in Chapter 4. Variations are the easiest way to get the most out of your game. However, designing an original scenario will require a reasonable degree of familiarity with the game itself.

We publish complete scenarios for the ***Decisive Battles Game System*** in our magazine ***Run 5.*** The magazine contains all the information required to create entirely new games using **Warplan** and **Warpaint**. For details on our ***Run 5*** magazine, please see the inside front cover of this manual.

2. USING THE DESIGN MENUS

The data card contains a schematic display of the design menus. They operate in the same way as the Game Menus that you have already used.

You cannot make changes to the historical scenarios themselves; rather you must save the scenario onto a save game disk and then edit the data. This is to prevent you from accidentally corrupting the historical scenarios. Nor can you edit a game in progress. Only scenarios with a game turn number of zero may be edited.

3. PREPARING A DISK

Whether making a variation to an historical scenario or creating an original scenario, the procedure for preparing a save game disk is essentially the same. Examine the Start and Design menus.

If you have not formatted a ***Decisive Battles*** save game disk, prepare one using the procedure given in Chapter 3 of the Game Routines.

When making a change to an historical scenario, select the <CREATE> line from Menu A and type (RET) to obtain Menu B.

If the template which is providing the source for the variation is on a scenario disk, select the <SCENARIO> line and type (RET). Select the chosen scenario from Menu C. The computer will automatically process you through to Menu J (Create Master).

If the template which is providing the source for the variation is on a save game disk, select the <DISK> line and type (RET). Load the chosen file from Menu D. The computer will automatically process you through to Menu J (Create Master).

Use **Warplan** and **Warpaint** to make whatever changes you wish to the data and then come back to Menu J.

Select the <DISK> line to go to Menu D. Select the <SAVE> line. Locate the desired save location in the catalog with the arrow keys and then type (RET). You will be offered an opportunity to enter a comment. Use it if you wish, otherwise select the <SAVE GAME> line and type (RET).

When you wish to create an original scenario, repeat the above procedure but before entering data use the <CLEAR> line in Menu J to erase the data bases.

4. VARYING A SCENARIO

Varying a scenario is a way of exploring historical options. It is much easier than creating a new scenario from scratch and is a good way to become familiar with the design mechanics. Preparing this scenario variation will give you a good background to the processes of scenario design.

Prior to the Battle of Shiloh, General Albert Sidney Johnson, commander of Confederate forces in Tennessee, had ordered General Earl van Dorn's Army of the Trans Mississippi to assemble at Corinth to form a fifth corps for his army. Unfortunately, van Dorn's army was caught in a sharp fight at Pea Ridge and did not arrive in time to take part in the battle.

We can suppose that van Dorn's army reaches Shiloh on the evening of April 6th and becomes available for action on the morning of the 7th. To add van Dorn's

army to the Confederate OB, we will have to add 1 corps HQ, 2 division HQs and 6 brigades.

STEP 1. Preparing a Save Game File. Boot the Master Disk and select <CREATE> from Menu A. Select <SCENARIO> from menu B. Select <SHILOH> from Menu C and you will be processed through to Menu J without further ado. Replace the scenario disk with a formatted save-game disk then select <DISK> from Menu J.

If you don't have a formatted save game disk, use the procedure explained in the previous chapter to prepare one. Select <SAVE> from Menu D.

Use the arrow keys to locate an empty save-game location and type (RET). Select <COMMENT> and enter the title ***Shiloh Variant***. Type (RET) to get back to the menu window. Select <SAVE GAME> and you will be returned to Menu J. You have prepared a save game file for the scenario variant.

STEP 2. Creating a Corps HQ. Keep the Design Menu card in front of you. Select <WARPLAN> from Menu J. Select <UNIT DATA> from Menu 4. Select <FORCES> from Menu 9. Select <SOUTH> from Menu 12. You are now into the unit creation routines. Select <CORPS> from the menu window. Select <GOTO> and the cursor will relocate to the small box above the menu window. Type (5) (RET) to obtain a blank corps creation roster. Corps 1-4 are already in use. Select <EDIT> from the menu window then type (van Dorn) (RET), (3) (RET) (16) (RET), (0) (RET), (15) (RET), (0) (RET) (4) (RET) (13) (RET), (9) (RET), (3) (RET) (2) (RET) (2) (RET) (7) (RET).

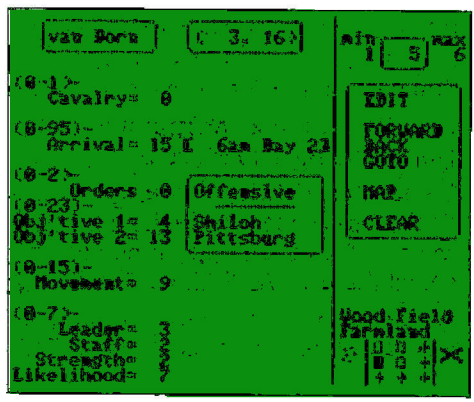


Fig 3.1. Corps Creation Screen

Van Dorn's Corps HQ is complete. **Fig 3.1** illustrates the completed Corps roster. Type (ESC/f1) twice to return to the unit type menu window.

STEP 3. Creating a Division HQ. There are two division HQs to create. Select <DIVISION> from the menu window. This time use the <FORWARD> line to advance through the existing divisions until the first blank roster is located. This should be number 5. Select <EDIT> from the menu window then type (Price) (RET), (5) (RET), (0) (RET), (0) (RET) (4) (RET) (13) (RET), (4) (RET) (3) (RET). That's Price's division HQ created. Type (ESC/f1) once and use <FORWARD> to move to division roster number 6. Select <EDIT> again then type (McCulloch) (RET), (5) (RET), (0) (RET), (0) (RET) (7) (RET) (13) (RET), (5) (RET) (3) (RET). Type (ESC/f1) twice to return to the unit type menu window.

STEP 4. Creating a Brigade HQ. There are six brigades to create. Select <BRIGADE> from the menu window. Use the <FORWARD> line to advance through the existing brigades until the first blank roster is located. This should be number 19. Select <EDIT> from the menu window then type (MSG) (RET), (1) (RET) (17) (RET), (0) (RET), (5) (RET), (15) (RET), (0) (RET), (4) (RET), (2) (RET), (14) (RET), (17) (RET), (6) (RET), (3) (RET), (0) (RET), (2) (RET), (7) (RET), (1) (RET), (3) (RET), (7) (RET). That's the Missouri State Guard brigade from Price's division created. The remaining brigades have the following values.

First Missouri State Troops Brigade (Price's Division). (MST) (RET), (1) (RET) (17) (RET), (0) (RET), (5) (RET), (15) (RET), (0) (RET), (4) (RET), (2) (RET), (13) (RET), (19) (RET), (6) (RET), (3) (RET), (0) (RET), (1) (RET), (7) (RET), (0) (RET), (4) (RET), (7) (RET).

Second Missouri State Troops Brigade (Price's Division). (MST) (RET), (1) (RET) (17) (RET), (0) (RET), (5) (RET), (15) (RET), (0) (RET), (4) (RET), (2) (RET), (14) (RET), (17) (RET), (6) (RET), (2) (RET), (0) (RET), (3) (RET), (7) (RET), (0) (RET), (3) (RET), (7) (RET).

Hebert's Brigade (McCulloch's Division). (Heb) (RET), (1) (RET) (17) (RET), (0) (RET), (6) (RET), (16) (RET), (0) (RET), (7) (RET), (2) (RET), (14) (RET), (31) (RET), (6) (RET), (3) (RET), (0) (RET), (4) (RET), (7) (RET), (5) (RET), (6) (RET), (7) (RET).

McIntosh's Brigade (McCulloch's Division). (McI) (RET), (1) (RET) (17) (RET), (0) (RET), (6) (RET), (16) (RET), (2) (RET), (7) (RET), (2) (RET), (17) (RET), (25) (RET), (9) (RET), (2) (RET), (0) (RET), (5) (RET), (7) (RET), (5) (RET), (6) (RET), (7) (RET).

Pike's Independent Red Indian Brigade. (Pik) (RET), (1) (RET) (17) (RET), (0) (RET), (0) (RET), (17) (RET), (1) (RET), (12) (RET), (2) (RET), (0) (RET), (9) (RET), (9) (RET), (0) (RET), (0) (RET), (3) (RET), (7) (RET), (6) (RET), (3) (RET), (7) (RET).

STEP 5. Saving the Data. That's all the editing you have to do. Type (ESC/f1) until you get back to Menu J. Select the <DISK> line. Select the <SAVE> line from Menu D. Select the <Shiloh Variant> from the <SAVE GAME> catalog.There is no need to add a comment so select the <SAVE GAME> line. The variant is created.

The most important thing to remember is to save the data before exiting Warpaint or turning the machine off.

5. THE WARPLAN DESIGN MENUS

This section describes the various menus in **Warplan** together with explanations of their functions. The order in which they are presented represents a convenient

sequence for the creation of a new scenario. Once you completed your new scenario, we suggest you run it through in <OBSERVE> mode seceral times to fine tune the game balance. To assist with this process, type Cntl (F) at any time to enter the fast resolution mode.

(a). MAP DATA (Menu 5)

(i). Map Size (Menu 6)

The map size in ***Decisive Battles*** is variable. Each map element is 9 hexes wide by 9 hexes deep. There may be up to three elements across and three down. Thus, the maximum size of a battlefield is 27 by 27 hexes. At a suggested ground scale of 300-500 yards per hex, this represents an area somewhere between 20 and 60 square miles.

In creating a scenario, map size ***must*** be set before anything else. Select the smallest map size that can comfortably support the action you wish to represent. Apart from being less work, smaller maps will mean faster games.

The top left sector should always be set to 0. Set the bottom right sector variable to the appropriate value. For example, to create an 18 x 27 battlefield (as used in the Antietam scenario), set the bottom right sector variable to 7. To make a 9 x 9 grid (i.e. a 1 sector map), set the bottom right sector variable to 0!

(ii). Define Terrain (Menu 7)

There are thirty-two (32) terrain shapes in ***Decisive Battles***. Each shape can be completely redrawn using our powerful **Warpaint** graphics editor. The names and sighting, movement, cover and fortification effects of each terrain type are defined here. It is possible to represent the ground conditions of any battlefield by judicious use of names and effects. Use the (RET) key to advance the cursor through the screen.

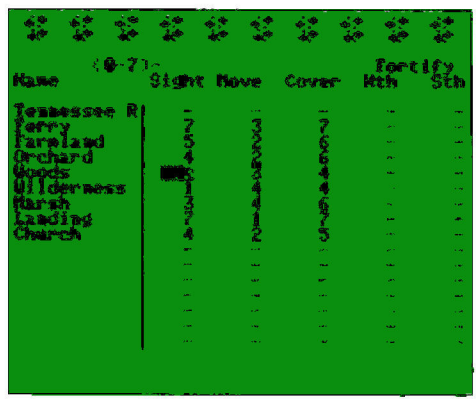


Fig 3.2 Terrain Effects Details

Examine any (or all) of the game scenarios and the blank design form in Appendix A. As an example, we have selected the Shiloh scenario. See **fig 3.2**.

Nine of the terrain shapes available have been used in this scenario.

For each terrain shape you wish to use, enter a 1-11 character name.

The sighting value represents the ease of visibility into and through the hex. A value of 0 specifies that there is no impediment to visibility; i.e. the hex is easy to see through. A value of 7 specifies that the line of sight is completely blocked. The sighting values assigned in the Shiloh scenario will give you a good idea of the relativities between the various terrain types.

The movement value of a hex specifies how many movement points each unit must expend when traversing it. Units in column formation will pay only 1 MP when using visible roads no matter what terrain type is underneath. Hidden roads do not affect the movement value of a hex. Note that terrain types with an MP value of 0 prohibit entry for any unit.

In the above example, <WOODS> terrain costs 3 MPs, both sighting and cover values are 4 and there is no fortification value. The terrain symbol along the top of the screen corresponds to the line currently being edited by the cursor.

The cover value of a hex measures the extent of natural protection from enemy attack provided by the terrain type. This does not include any man-made structures. A value of 0 specifies that there is little or no protection afforded to units occupying the hex. A value of 7 indicates tremendous protection. Note that brigades defending hexes with high natural cover values may have more difficulty in bringing fire to bear on the enemy than a brigade in more open terrain. Assaults launched from heavily covered hexes may also be less effective than assaults from open ground. There is a balance to be struck here. Brigades assaulting from open terrain will generally suffer more severely than brigades assaulting from heavily covered terrain.

The fortification value measures the extent of man-made rifle pits, breastworks and basic field defenses in a given hex type. We have allowed the use of 31 hex types to ensure there are enough to construct detailed field defenses. A value of 7 specifies the extensive development of field defenses. A value of 0 specifies none. A separate entry should be used for North and South fortifications.

By examining the terrain data bases in each of the historical scenarios, you can quickly see how to implement these values in your own designs. Note, however, that the Civil War battles covered in this volume are from the first two years of the war. Field defense construction became an ever more important battlefield tactic to both sides as the war progressed. The Confederacy, particularly, excelled in the preparation of complex and deadly entrenchments.

In many instances, you will note several hex shapes with the same name and effect values. The large number of hex types available has allowed us to customize terrain features to produce a more aesthetically pleasing battlefield.

(iii). Map Create Utility (Menu 8)

It's probably a good idea to make a draft version of your battlefield before completing the rest of the map data. However, we strongly advise you not to edit

the map screen until all the information in Menus 6 and 7 has been compiled and entered into the program.

A 9 x 9 hex section of the map will appear with a white, hollow, flashing cursor. In the top right of the screen you will find the hex co-ordinate of the cursor's current location. In the bottom right of the screen you will see the terrain name, the icon corresponding to the name, the relative position of the cursor in relation to the whole map and the icon identifying the side which controls the hex. If the hex has been defined as an objective, the name appears immediately above the terrain name.

There are 32 terrain types which can be entered. River, bridge and ford hex-sides can be entered. Roads can be added to a hex . Every hex must be identified as North or South controlled.

The I,J,K,M and 1-6 keys will move the cursor around the battlefield. Type (0) centre the screen on the cursor.

To create a terrain type in a hex, type (T)(n) where n = a number between 0 and 31. Please see the blank terrain effects chart in Appendix A. Note that terrain types T1-T3 require you to type (T) (n) (SPACE). This is to distinguish them from double digit terrain types which use 1-3 as the first number. Terrain types T0 and T1(SPACE) are water hexes. T0 cannot be entered by any units. T1(SPACE) can be entered by all units and is therefore suitable as a bridge, ferry, ford or pontoon link across a wide body of water. Terrain types T2(SPACE)-T31 can be entered by all unit types and it is these types which make up the land component of the battlefield.

The road structure needs some explanation. There are two types of roads; functional roads and cosmetic roads. Functional roads are those used by the movement routines to march columns of men long distances. Cosmetic roads are those which end in dead ends, the map edge or anywhere which could confuse the computer. Use a cosmetic road if you don't want the computer to treat the hex as a road when moving troops in column or determining march routes.

Units using either type of road pay 1 MP per road hex entered. To add a functional road to a hex, type (R) while the cursor is over the hex. Type (R) again to remove the road. To add a cosmetic road to a hex, type (C) while the cursor is over the hex. Type (C) again to remove the cosmetic road.

Functional roads are one of two types; normal or hidden. Type (R) (X) to specify a hidden road. The road icon is masked by the terrain icon and any units using the road will pay the movement value of the terrain in the hex.

The movement routines will nonetheless use hidden roads as though they were normal roads when determining march routes and column movement. This technique is suited for picking out a track through dense terrain where placing a normal road would confer too great an advantage on the user. Type (X) again to convert the hidden road back to a normal road.

To create a river hex-side, you must type three keys. The first is (S). This identifies a hex-side. The second is a number between 1 and 3. This identifies north, north-eastern and south-eastern hex-sides respectively. Note that the south hex-side of one hex is the north hex-side of the hex directly below it. In this way, all 6 hex-sides can be edited. The third is a number between 1 and 3. (1) identifies a river. (2) identifies a bridge. (3) identifies a ford. Type (S0) to clear all hex-sides from a particular hex. Rivers cannot be crossed except at fords or bridges. The presence of small streams can be accounted for in the terrain types.

Unlike our previous design kits, cities are created by using the terrain types; they are not a separate flag.

To set control of a hex to North or South, type (RET) to bring up the map menu and select <SET NORTH> or <SET SOUTH> as appropriate. All hexes, except T0s, will have their terrain icon replaced by the North or South control icon. As the cursor moves, it will leave a trail of the appropriate control icons behind it. To change control, type (RET) to bring up the map menu and select <RESET ALL>. You are back at square one and can repeat the procedure using the other control icon. When editing hex control from scratch, the default value is South.

For convenience, you can set the cursor to automatically produce a terrain shape. With the cursor flashing on the chosen terrain, type (RET). This brings up the map menu on the right of the screen. Selecting <SET SHAPE> from this menu will lock the current terrain shape to the cursor. You may now move the cursor and the selected shape will be created wherever the cursor is moved. Type (RET) again to go back to the menu and select <RESET ALL> to turn off the shape.

We suggest you keep the map size as small as possible for your first original scenario.

All maps are compromises between the actuality of the terrain and its representation. Do not feel afraid to be creative with terrain to make the map work properly within the game system.

(b). UNIT DATA (Menu 9)

(i). Limits (Menu 10)

The limits menu is used to divide the available unit blanks between the North and South. Select <FORCES> and by typing the (RET) key repeatedly you will see there are three values to be entered.

There are a maximum of 15 Corps which may be created. When you type a number into the <CORPS> line you are allocating the available Corps between the North and South. The South is allocated a number of Corps equal to 1 less than the number entered. For example, if you type (8) the South will be allowed a maximum of 7 Corps. This number appears in the <max> column of the Southern Corps line.

The procedure for allocating divisions and brigades is identical. For example, a value of 19 in the division line would mean that the Rebs could use a maximum of 18 divisions, the Union 21.

We have chosen this way of unit allocation so that we can produce the largest possible force pool in the smallest amount of memory.

Note that the value range displayed to the left of the North forces shows the current, legitimate range for each entry.

Weapons are treated similarly. There are a maximum of 31 weapon types which may be created. When you type a number into the <artillery> line you are allocating the available weapon types between artillery and small arms. Small arms types are allocated a number of weapons equal to 1 less than the number entered. For example, if you type (13) you will be allowed to create a maximum of 12 small arms types. This number appears in the <max> column of the Small Arms line.

(ii). Weapons (Menu 11)

Examine the blank weapons roster in Appendix A. If the scenario you are preparing is set in the American Civil War, then the weapons roster used in all of the historical scenarios should be more than adequate. Otherwise, you will have to make your own.

There are 31 possible weapon types you may use. These must be divided between artillery types and small arms types. You will have already used Menu 10 (Define Limits) to select the number of each type you require.

Artillery

To create an artillery type, complete the following steps.

I.D. Enter a 1-11 character name to identify the artillery type.

RANGE. Enter a value between 0 and 5. This is the effective range, measured in hexes, of the artillery type. For example, in a scenario where the ground scale is 500 yards/hex, a 6pd smoothbore would have an effective range of 2 hexes.

RATE OF FIRE. Enter a value between 0 and 7. This value measures the reliability, ease of use and rate of fire of a gun.

EFFECTIVENESS. Enter a value between 0 and 7. This value measures the performance of the gun at close range; i.e. the effectiveness of its fire into an adjacent hex.

PENETRATION. Enter a value between 0 and 7. This value measures the fall-off in performance as the range of the gun increases. A value of 0 means that the gun has little effect beyond the first hex. A value of 7 means that the gun retains much of its effectiveness at its maximum range.

Small Arms

To create a small arms type, complete the following steps.

I.D. Enter a 1-11 character name to identify the small arms type.

RANGE. Enter a value of 0 or 1. A value of 0 indicates that the small arms type is primarily for melee use. A value of 1 indicates that the small arms type is primarily a projectile weapon. Troops armed with both melee and projectile weapons should be assigned a value corresponding to their primary type.

FIRE EFFECT. Enter a value between 0 and 7. This value is a quantitative measure of the firepower delivered by the small arms type.

MELEE EFFECT. Enter a value between 0 and 7. This value is a quantitative measure of the melee performance of the small arms type.

For example, Civil War cavalrymen used firearms for skirmishing but switched to sabres on the occasion of a charge. The fire effect of the pistol should be 1 or 2 while the melee effect of a sabre in the hands of a mounted cavalryman should be 5 or 6. However, Civil War cavalrymen were not primarily employed in a charging role so the range should be set at 1.

(iii). Forces (Menus 12-13)

Examine the blank force rosters in Appendix A. One of these should be prepared for each formation in the game. Do not attempt to edit the screen until these rosters have been completed.

The most important thing to note about troop creation in the ***Decisive Battles System*** is that there is no fixed organizational structure. For example, brigades may be attached to divisions, or corps, or even directly to the Army HQ. Such a flexible structure is the best way to reflect the operational employment of troops in the nineteenth century.

Army HQs

COMMANDER. Enter a 1-11 character name to identify the commander of the Army.

SECOND IC. Enter a 1-11 character name to identify the second in command of the Army. This variable should only be used where a second in command was officially appointed such as Beauregard at Shiloh. A 2IC will reduce the adverse effects of a CiC casualty.

HQ I.D. Enter one or two 1-11 character names to identify the Army.

LOCATION. Enter the x,y map co-ordinates of the Army HQ's start or arrival hex.

ARRIVAL. Enter a number between 0 and 95. This is the turn that the Army HQ will arrive on the map. An arrival number of 0 means the HQ begins the game

deployed on the map. A human player will have no control over his subordinates until the Army HQ appears on the map.

OFFENSE #1. Enter a value between 0 and 23. A value of 0 specifies that there is no offensive objective; any other value identifies the chosen objective. Only enemy controlled objectives should be chosen.

OFFENSE #2. Enter a value between 0 and 23. As above. A computer Army commander will attempt to capture the first objective before moving on to the second objective.

DEFENSE#1. Enter a value between 0 and 23. A value of 0 specifies that there is no defensive objective; any other value identifies the chosen objective. Friendly controlled objectives must be chosen.

DEFENSE#2. Enter a value between 0 and 23. As above. A computer Army commander will defend both objectives, giving preference, if necessary, to the first defensive objective.

HQ MOVEMENT. Enter a value between 0 and 15. It is the number of movement points the Army HQ has available each turn to move over the map. The value should reflect the vigour shown by the Army's commander throughout the battle. For example, McClellan's Army HQ at Antietam could be given 4 MPs while Lee's HQ at the same battle could have 12 MPs. The value should also be related to the movement allowances of other troops and to the terrain effects. In general, an Army HQ should have a higher movement allowance than a Corps HQ.

STAFF. Enter a value between 0 and 7. This value is a subjective evaluation of the amount of preparation the Army HQ has done for the battle. Factors which are included in this rating are battlefield familiarity (recon), extent and detail of the briefings given to subordinates, staff experience and the overall confidence of the army in its commander.

To use the Antietam example again, McClellan deserves a staff value of 1 or 2 while Lee deserves a staff value of 6 or 7. (i.e. McClellan did no battlefield reconnaissance and created rather than cured confusion among his subordinates by not issuing proper written orders; the only factor in his favour was a reasonably competent staff. Lee knew the battlefield, prepared his subordinates thoroughly for the battle, was well served by an enthusiastic staff and enjoyed the complete confidence of the rank and file.)

STRENGTH. Enter a value between 0 and 7. This value simply describes the size of the provost guard accompanying the Army HQ. The units are 100s of men. It is not suitable for offensive use.

LEADERSHIP. Enter a value between 0 and 7. This value is only used when the computer is placed in command of an Army. Human commanders must rely upon their own judgement and intuition when issuing orders to subordinates. You can expect a much tougher battle from a commander with a high leadership value than from a lowly rated duffer.

Corps HQs

ARMY HQ I.D. Enter 1-9 character name to identify the Corps or its commander.

LOCATION. Enter the x,y map co-ordinates of the Corps HQ's start or arrival hex.

CORPS TYPE. Enter a value of 0 or 1. A value of 0 specifies an infantry corps; a value of 1 specifies a cavalry corps.

ARRIVAL. Enter a number between 0 and 95. This is the turn that the Corps HQ will arrive on the map. An arrival number of 0 means the HQ begins the game deployed on the map. You will not be able to issue commands to the subordinates of a particular corps until that corps' HQ has entered the map. Brigades belonging to a Corps not yet on the map may be directed by the Army commander provided they are within the four hex immediate command range.

ORDERS. Enter a number between 0 and 2. 0 = offensive, 1 = defensive, 2 = reserve. A Corps formation must have an offensive order to move on an enemy controlled objective or to issue such an objective to a division HQ under its control. A Corps with an offensive order may select two objectives, the first defines the route of march to the final destination.

A Corps with a defensive order may move, or issue such an order to a subordinate division HQ, only to a friendly controlled objective. Only one objective can be given to a corps with a defensive order. A Corps with a reserve order will hold in place, awaiting further orders. A Corps with a reserve order will not pay any attention to an objective. Note that the Army commander can change these orders as soon as the Corps HQ comes within communication range. The primary function of these orders is to make sure that newly arriving troops do not mill about aimlessly but move sensibly into battle.

OBJECTIVE #1. Enter a value between 0 and 23. A value of 0 specifies no objective; any other value identifies a particular objective. The previous paragraph describes their purpose.

OBJECTIVE #2. Enter a value between 0 and 23. As above.

HQ MOVEMENT. Enter a value between 0 and 15. It is the number of movement points the Corps HQ has available each turn to move over the map. The value should reflect the vigour shown by the Corps' commander throughout the battle. For example, Hooker's I Corps HQ at Antietam could be given 9-12 MPs while Burnside's IX Corps HQ at the same battle could have 1-3 MPs. The value should also be related to the movement allowances of other troops and to the terrain effects. In general, Corps HQs should have more MPs than subordinate brigades of the same type.

LEADERSHIP. Enter a value between 0 and 7. This value measures the experience, confidence and determination of the Corps commander. It is especially important when the Corps HQ is not in communication with its Army HQ and must rely on its own initiative to get things moving.

STAFF. Enter a value between 0 and 7. This value is a subjective evaluation of the amount of preparation the Corps HQ and its commander have done for the battle. Factors which are included in this rating are battlefield familiarity (recon), extent and detail of the briefings given to subordinates, staff experience and the overall confidence of the corps in its commander. These are the same criteria used to rate the Army staff values.

STRENGTH. Enter a value between 0 and 7. This value simply describes the size of the provost guard accompanying the Corps HQ. The units are 100s of men. It is not suitable for offensive use.

LIKELIHOOD. Enter a value between 0 and 7. This value measures the likelihood of a Corps HQ appearing on its start or arrival hex at the scheduled time. A value of 7 means that the Corps HQ is certain to arrive. HQs or brigades on the same side with the same likelihood value will be delayed by the same number of turns. Units with values of 4 or less may not arrive at all.

Division HQs

DIVISION HQ I.D. Enter 1-9 character name to identify the Division or its commander.

CORPS. Enter a number between 0 and 15. This number defines the place the division will occupy in the order of battle. An entry of 0 places the division directly under the command of the Army HQ. An entry of 1-15 places the division under the command of the Corps HQ identified by that number.

DIVISION TYPE. Enter a value of 0 or 1. A value of 0 specifies an infantry division; a value of 1 specifies a cavalry division. Mounted infantry divisions should be classified as infantry divisions for this purpose. You should not place artillery brigades in divisions but rather attach them to Corps or Army HQs. Division artillery should be distributed among the component brigades.

ORDERS. Enter a number between 0 and 2. 0 = offensive, 1 = defensive, 2 = reserve. A division must have an offensive order to move on an enemy controlled objective. A division with an offensive order may select two objectives, the first defines the route of march to the final destination. A division with a defensive order may move only to a friendly controlled objective. Only one objective can be given to a division with a defensive order. A division with a reserve order will hold in place, awaiting further orders. A division with a reserve order will not pay any attention to an objective. Note that the Army commander, or the Corps commander, can change these orders as soon as the division comes within communication range. The primary function of these orders is to make sure that newly arriving troops do not mill about aimlessly but move sensibly into battle.

OBJECTIVE #1. Enter a value between 0 and 23. A value of 0 specifies no objective; any other value identifies a particular objective. The previous paragraph describes their purpose.

OBJECTIVE #2. Enter a value between 0 and 23. As above.

LEADERSHIP. Enter a value between 0 and 7. This value measures the experience, confidence and determination of the division commander. It is especially important when the Division HQ is not in communication with its superior HQ and must rely on its own initiative to get things moving.

STAFF. Enter a value between 0 and 7. This value is a subjective evaluation of the amount of preparation the Division HQ and its commander have done for the battle. Factors which are included in this rating are battlefield familiarity (recon), extent and detail of the briefings given to subordinates, staff experience and the overall confidence of the division in its commander. These are the same criteria used to rate the Army and Corps staff values.

Brigades

BRIGADE I.D. Enter a 1-3 character name to identify the brigade or its commander.

LOCATION. Enter the x,y map co-ordinates of the brigade's start or arrival hex.

CORPS. Enter a number between 0 and 15. This number helps define the place the brigade will occupy in the order of battle. An entry of 1-15 places the brigade directly under the command of the Corps HQ identified by that number. An entry of 0 means that the brigade is not under the command of any of the corps in the game.

DIVISION. Enter a number between 0 and 39. This number helps define the place the brigade will occupy in the order of battle. An entry of 1-39 places the brigade directly under the command of the Division HQ identified by that number. An entry of 0 means that the brigade is not under the command of any of the divisions in the game.

Note that if both Corps and Division values are 0, then the brigade will be under the direct command of the Army HQ.

ARRIVAL. Enter a number between 0 and 95. This is the turn that the brigade will arrive on the map. An arrival number of 0 means the brigade begins the game deployed on the map.

BRIGADE TYPE. Enter a value of 0-3. A value of 0 specifies an infantry brigade, a value of 1 specifies a mounted infantry brigade, a value of 2 specifies a cavalry brigade and a value of 3 specifies an artillery brigade.

OBJECTIVE. Enter a value between 0 and 23. A value of 0 specifies no objective; any other value identifies a particular objective. In general, the only brigades which need objectives are independent brigades attached to Corps or Army HQs or brigades scheduled as reinforcements. If a reinforcing brigade does not have an objective, it will mill about for one turn before receiving instructions from its superior HQ.

SMALL ARMS TYPE. Enter a value between 0 and 31. A value of 0 specifies that the brigade is not equipped with small arms. A value of 1-31 specifies which small arms type from the weapons list has been issued to the brigade.

ARTILLERY TYPE. Enter a value between 0 and 31. A value of 0 specifies that the brigade is not equipped with artillery. A value of 1-31 specifies which artillery type from the weapons list has been issued to the brigade.

TROOP STRENGTH. Enter a value between 0 and 31. This value describes the size of the brigade in increments of 100 men.

MOVEMENT. Enter a value between 0 and 15. It is the number of movement points the brigade has available each turn to move over the map. We recommend that Infantry and artillery brigades be given 4-8 MPs, mounted infantry and cavalry brigades 6-12 MPs. Brigades which were capable of particular initiative or enthusiasm can be given a 1-3 MP bonus. The final value chosen should also take into account the movement point costs of the terrain on the battlefield.

ARTILLERY STRENGTH. Enter a value between 0 and 15. This value specifies the number of artillery pieces in the brigade. For all Civil War battles, we recommend that 1 point of this value be equal to 2 pieces of artillery. Thus, a typical 6 gun battery attached to a brigade would have an artillery strength of 3.

SHATTERED. Enter a number between 0 and 1. A value of 0 indicates that the brigade begins the game in a normal condition. A value of 1 indicates that the brigade begins the game suffering from a recent mauling. The effect is the same as for a brigade shattered in the course of the game.

LEADERSHIP. Enter a value between 0 and 7. This value measures the experience, confidence and determination of the brigade commander. It is especially important when the brigade is not in communication with its superior HQ and must rely on its own initiative to get things moving.

COHESION. Enter a value between 0 and 7. This value should be set at 7 unless the scenario begins in the middle of a battle. Cohesion measures the current fighting condition of the brigade as described in the game routines section.

EXPERIENCE. Enter a number between 0 and 7. 0 = green and unreliable (but not necessarily useless), 7 = elite troops of the highest quality (for example the Iron Brigade or the Stonewall Brigade). The average brigade should have an experience between 3 and 5, although this value should increase toward the end of the war; especially for Confederate brigades.

REGIMENTS. Enter a number between 0 and 7. This number specifies the number of regiments (or major sub-units) which make up the brigade. It is a very good indicator of the brigade's flexibility.

LIKELIHOOD. Enter a value between 0 and 7. This value measures the likelihood of a brigade appearing on its start or arrival hex at the scheduled time. A value of 7 means that the brigade is certain to arrive. HQs or brigades on the same side with the same likelihood value will be delayed by the same number of turns.

(iv). Objectives (Menu 14)

Examine the blank objective chart in Appendix A as well as fig 3.3.

A maximum of 23 objectives per scenario can be created. The <FORWARD> and <BACK> lines in the menu window are used to bring up the next objective. The <EDIT> line is used to enter the objective and set its parameters. The <MAP> line is an alternative method of positioning the objective on the map.

Each objective must be given a 1-11 character name and an x,y map location.

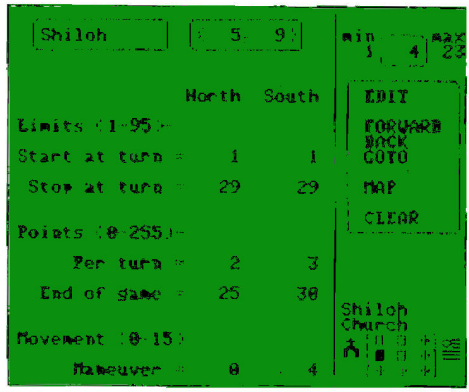


Fig 3.3 Create Objective Screen

Victory points for each side can be awarded for the possession of an objective on a turn by turn basis throughout the game and/or at the end of the game.

When awarding points throughout the game, you must select the turn that point scoring will begin and the turn on which it will end.

If you wish to create an objective simply as a signpost for the direction of your troops, then don't assign any VPs for its possession.

A manoeuvre value of 0-15 is available to make a particular objective more attractive to the computer's movement routines. The higher the value, the more likely is the computer to route troops through that point. The best way to get the feel for this tool is to have a careful look at the historical scenarios. Then, if the troops in your scenario are reluctant to go the way you want them to, experiment with the manoeuvre value.

(c). TITLE (Menu 15)

Enter a 1-16 character name for the scenario. There are up to three 26 character lines you can use for a sub-title to the scenario.

Enter a 1-9 character name to identify the *North* nationality. Enter a 1-9 character name to identify the *South* nationality. These character names will be the ones appearing in the first game menu; i.e. Menu H (Game Master).

(d). BRIEFING (Menu 16)

(i). Scenario Setup (Menu 17)

Enter the turn, day, month, year and century that the scenario begins.

A maximum movement distance (in hexes) must be specified for each type of unit. A separate specification is made for each nationality. Enter a value between 0 and 15. We recommend, for Civil War battles, these values; infantry brigades (4-6), mounted infantry brigades (6-9), artillery brigades (4-9), cavalry brigades (6-12) and HQs (9-15).

To recreate the conditions of a surprise attack, enter a value of 1 in the <Encamped> line for a side which is caught unprepared by the enemy assault. If there is no surprise, enter a value of 0. For example, the Union forces begin the Shiloh scenario encamped.

In addition to the victory points awarded for the occupation of objectives, points are also awarded for causing casualties to enemy leaders and troops. A value of 0-31 can be entered for each category.

(ii). Scenario Details (Menu 18)

Examine the blank briefing form in Appendix A as well as any of the scenarios.

A scenario may last as long as 4 days. These routines fill out much of the background information necessary to get the game moving.

For each day the expected atmospheric weather must be defined, whether each side is expected to take the offensive must be decided and three values must be entered for each of the 24 hours in a day.

WEATHER. Enter a value between 0 and 4. 0 = clear, 1 = overcast, 2 = drizzle, 3 = rain, 4 = snow.

NORTH OFFENSIVE. Enter a value of 0 or 1. A value of 0 puts the North on the defensive for the day. A value of 1 puts the North on the offensive for the day.

SOUTH OFFENSIVE. Enter a value of 0 or 1. A value of 0 puts the South on the defensive for the day. A value of 1 puts the South on the offensive for the day.

MODE. Enter a value between 0 and 3. 0 = night, 1 = dawn, 2 = dusk, 3 = day.

MOVE. Enter a value between 0 and 3. 0 = no move, normal cohesion recovery will occur; 1 = normal move, both sides will move and fight; 2 = end game, a normal move is completed and then the game ends; 3 = skip, no move and no cohesion recovery is allowed.

FOG. Enter a value between 0 and 2. 0 = no fog, 1 = light fog, 2 = heavy fog.

6. WARPAINT

Warpaint is entirely new to wargame construction. Even we are amazed at just how useful it is. Every icon in the game can be edited.

(a). WARPAINT (Menu 19)

The <GRAPHICS> line gives access to the icon editor. The <STORE> and <RECALL> lines are used to install or extract a graphics set from any ***Decisive Battles Game System*** save game or scenario disk.

(b). GRAPHIC DESIGN (Menu 20)

The screen shows a large boxed section on the left. This is a pixel by pixel, (dot by dot), representation of an icon. Below it the icon is shown in white and the allowable colors as it would look upon the screen. The icon number is shown above the menu box. The current selected color is shown below the menu box. Selecting the <EDIT> line shows a flashing cursor in the top left of the icon box. The box is 14 elements across by 16 elements down.

A pixel is shown by a white square and its absence by a white dash.

The I, J, K, and M keys or the arrow keys are used to move the cursor around the icon box. At any location the (RET) key creates a pixel if none is present and removes it if there is one. As you make changes in the large icon box these are reflected in the small icons at the bottom of the screen.

Examine **fig 3.4**. This shows the **Warpaint** editor (Apple version) and the standard woods symbol. This icon illustrates just what can be achieved. Note that the color is specified at the bottom right of the screen.

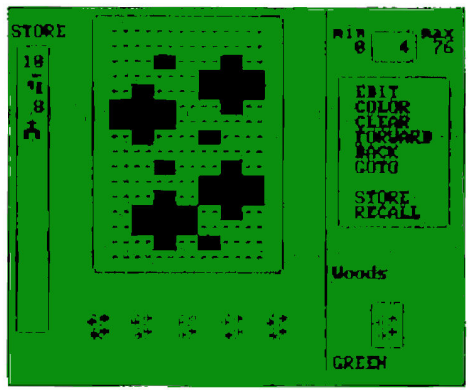


Fig 3.4 Graphic Editor

There are a few points that you need to be aware of to get the best results. These may vary from computer to computer and are explained in detail below. It is best to make frequent saves to disk when editing icons as mistakes can produce unintended consequences.

After using the edit function type (ESC) to leave. You will be asked to <SAVE> or <IGNORE> your changes and must make this choice before returning to Menu 21. Choosing <SAVE> incorporates any changes you have made while <IGNORE> returns the icon to its previous shape.

The <COLOR> option allows you to change the selected color of the icon. The <STORE> and <RECALL> options allow you transfer up to 6 icons at a time between different icon numbers, allowing easy variations. The <CLEAR> option blanks the screen.

TECHNICAL NOTES FOR APPLE AND COMMODORE

Apple Users

Welcome to the wonderful world of color mixing. There are a number of restrictions in the Apple graphics as some random experimentation will make obvious. Vertical white lines must be at least two pixels wide, otherwise they turn out either orange or blue. Depending on which column they are in, vertical lines one pixel wide can appear in two colors and are invisible in the other two. Essentially, any shape that looks good in both white and a color must be multiples of two pixels across, unless you like the weird color mixing you get by defying this rule. Some icons are designed to be used only in white and so can ignore the weird color effects.

Since the color of a dot can change depending on exactly where on the screen it happens to be located, designing non white icons also demands care. Building icons to the edges can cause color mixing problems, especially at the corners.

Commodore Users

The Commodore does not have the restrictions of the Apple with regard to pixel combinations. Its icon resolution is 16 x 16. However the Commodore does have some color mixing problems of its own, especially at the top and bottom of hexes.

Icon Functions

All icons have a particular function. In the case of the terrain icons (numbers 0 to 31), the functions and the name are defined in the terrain menu. All other icons serve a particular purpose which does not change. If you edit the Confederate Army HQ icon to look like a woods symbol, it will still function as an Army HQ.

APPENDIX A (Blank Design Forms)

TERRAIN EFFECTS CHART

TERRAIN TYPE	T0-T31													
SIGHTING VALUE	0-7													
MOVEMENT COST	0-7													
COVER VALUE	0-7													
FORT. (NORTH)	0-7													
FORT. (SOUTH)	0-7													

ARTILLERY ROSTER

ARTILLERY #	1-39						
ARTILLERY ID	[11]						
RANGE	0-7						
RATE OF FIRE	0-7						
EFFECTIVENESS	0-7						
PENETRATION	0-7						

SMALL ARMS ROSTER

SMALL ARMS #	1-39						
SMALL ARMS ID	[11]						
RANGE	0-1						
FIRE VALUE	0-7						
MELEE VALUE	0-7						

BRIGADE ROSTER

BRIG. NUMBER	1-127											
BRIGADE I.D.	[3]											
MAP LOC	(x,y)											
CORPS	0-15											
DIVISION	0-39											
ARRIVAL	0-95											
TYPE	0-3											
OBJECTIVE	0-23											
SMALL ARMS	0-31											
ARTILLERY	0-31											
TROOP STREN.	0-31											
MOVEMENT	0-15											
BATTERY STR.	0-15											
SHATTERED	0-1											
LEADERSHIP	0-7											
COHESION	0-7											
EXPERIENCE	0-7											
REGIMENTS	0-7											
LIKELIHOOD	0-7											

CORPS ROSTER

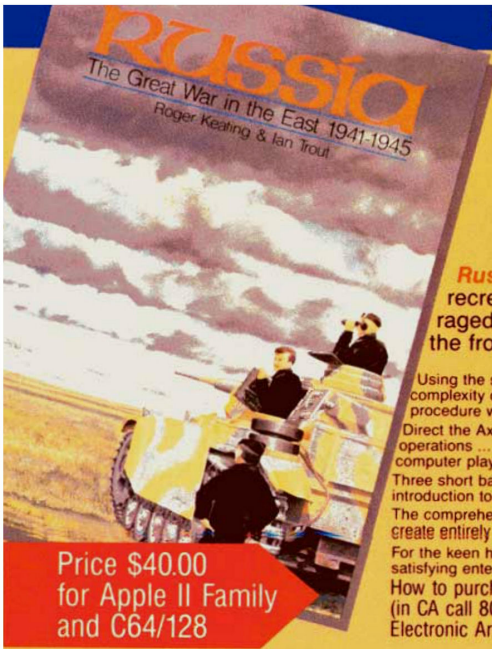
CORPS NUMBER	1-15										
CORPS I.D.	[9]										
MAP LOC	(x,y)										
TYPE	0-1										
ARRIVAL	0-95										
ORDERS	0-2										
OBJECTIVE #1	0-23										
OBJECTIVE #2	0-23										
MOVEMENT	0-15										
LEADERSHIP	0-7										
STAFF	0-7										
STRENGTH	0-7										
LIKELIHOOD	0-7										

DIVISION ROSTER

DIV. NUMBER	1-39										
DIVISION I.D.	[9]										
CORPS	0-15										
TYPE	0-1										
ORDER	0-2										
OBJECTIVE #1	0-23										
OBJECTIVE #2	0-23										
LEADERSHIP	0-7										
STAFF	0-7										

OBJECTIVE ROSTER

OBJECTIVE	1-23										
MAP LOCATION	(x,y)										
START TURN (NORTH)	1-95										
STOP TURN (NORTH)	1-95										
VPs/TURN (NORTH)	0-255										
VPs AT END (NORTH)	0-255										
MAN. VALUE (NORTH)	0-15										
START TURN (SOUTH)	1-95										
STOP TURN (SOUTH)	1-95										
VPs/TURN (SOUTH)	0-255										
VPs AT END (SOUTH)	0-255										
MAN. VALUE (SOUTH)	0-15										



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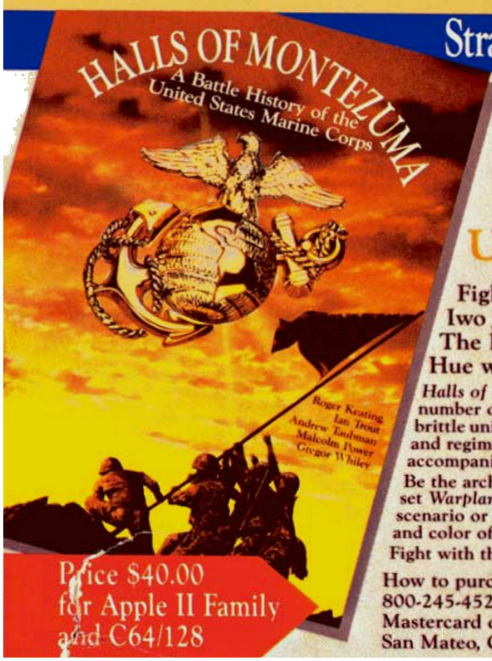
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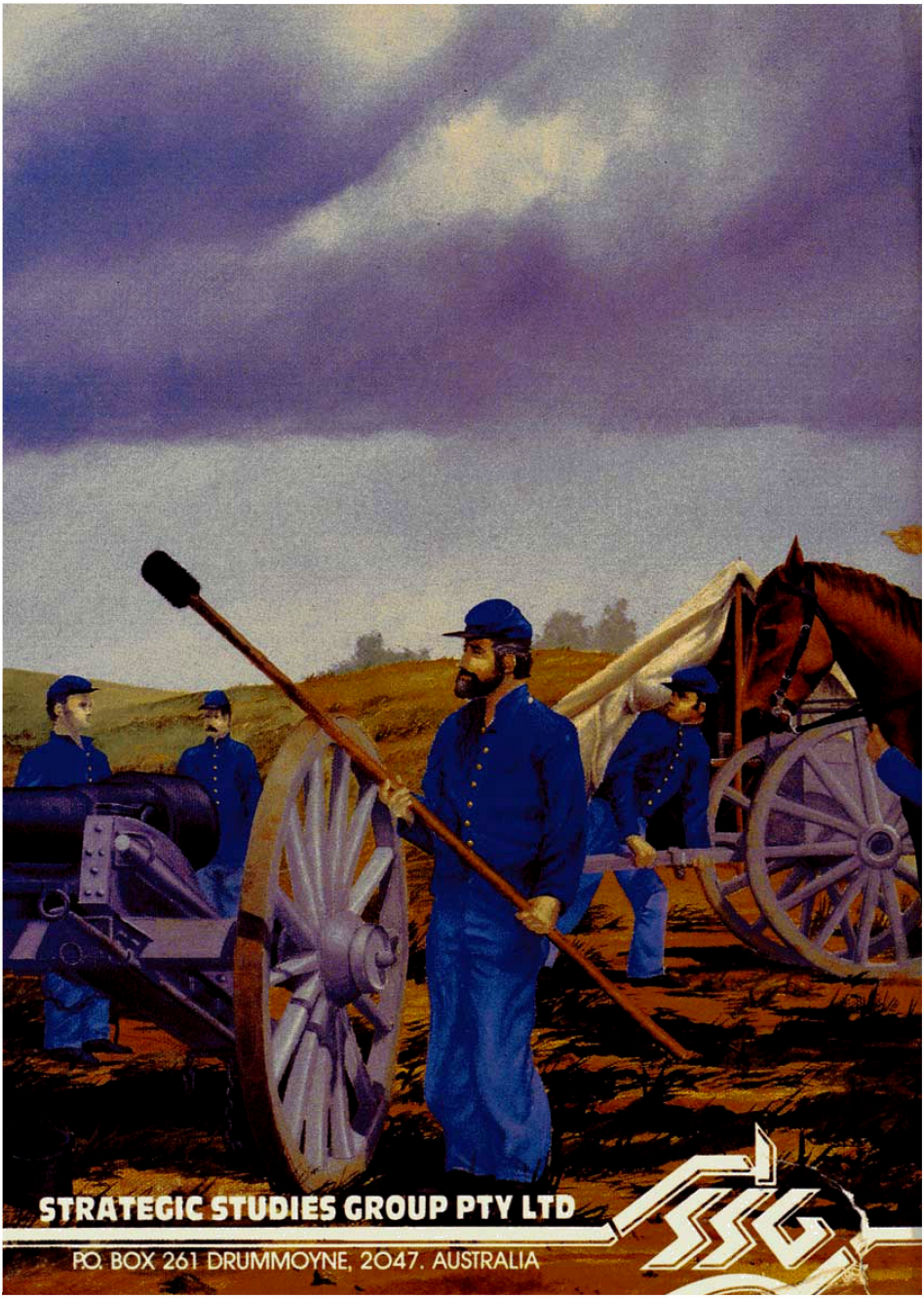
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