

**Random Modifier:** 1.0 to 1.2 modified by the level of play.

**Unit Outmaneuvered:** Firing Unit's strength is cut in half for that attack.

**Successful Attack:** Firing Unit's strength is increased by 50% for that attack.

**Maximum and Minimum Modifiers:** All modifiers are cumulative with a maximum of 2.0 and a minimum of 0.2.

All modifiers are cumulative as shown in the example below:

A unit firing under the conditions below would receive the indicated modifiers (all modifiers are multiplied together).

- Firer has 2000 men in square	= 0.80
- Target in light woods	= 0.70
- Target has 3000 men in square	= 1.40
- Firer in column mode	= 0.30
- Firer has 75 efficiency	= 0.87
- Firer has 15 fatigue	= 0.93
- Firer has leader bonus of 15	= 1.15
- Firer has command control of 1.3	= 1.30
- Random modifier is 1.3	= 1.30
<b>TOTAL</b>	<b>0.28</b>

A unit above with 2000 men would fire with a strength of 560. (With rifles at range one, it would kill 22 to 26 men.)

## OPERATION COSTS TABLE

TERRAIN/ACTION	INF. DIS. CAV.	MTD. CAV.	LIBB. ART.	UNLIMB. ART.
Clear/Peach Orchard	2(3)	1(2)	2(3)	P
Light Woods	3(4)	2(3)	3(4)	P
Heavy Woods	4(6)	4(6)	7(9)	P
Swamp	6(8)	6(8)	P	P
Ravine	3(4)	7(9)	7(9)	P
Ford	3(5)	1(2)	5(7)	P
Bridge	1(5)	1(5)	1(5)	P
Roads [1]	1	1	1	P
Stream	4(6)	1(2)	5(7)	P
SPECIAL ACTIONS	INF. DIS. CAV.	MTD. CAV.	LIBB. ART.	UNLIMB. ART.
Enter higher elevation	+1	+1	+2	P
Change mode to column, mounted, or limbered [4]	2	2	N/A	2
Change mode to normal, dismounted, or unlimbered [3] [5]	4	4	4	N/A
Enter or leave enemy ZOC	+2	+1	+3	P
Move from enemy ZOC to enemy ZOC [2]	+5	+3	+7	P
Fortify	8	8	P	8
Reorganize	2	N/A	N/A	N/A
Melee (attacker)	2	2	P	P
Melee (defender)	2	2	2	2
Fire in fire phase	2	2	P	4

Numbers in parentheses refer to diagonal moves — directions 2, 4, 6, and 8 (1, 3, 7, 9 on the IBM key pad). For the BASIC game, please ignore the numbers and letters printed in blue. ZOC stands for zone of control, which is a wargaming term for the squares next to a unit. P = Prohibited and N/A = Not Applicable.

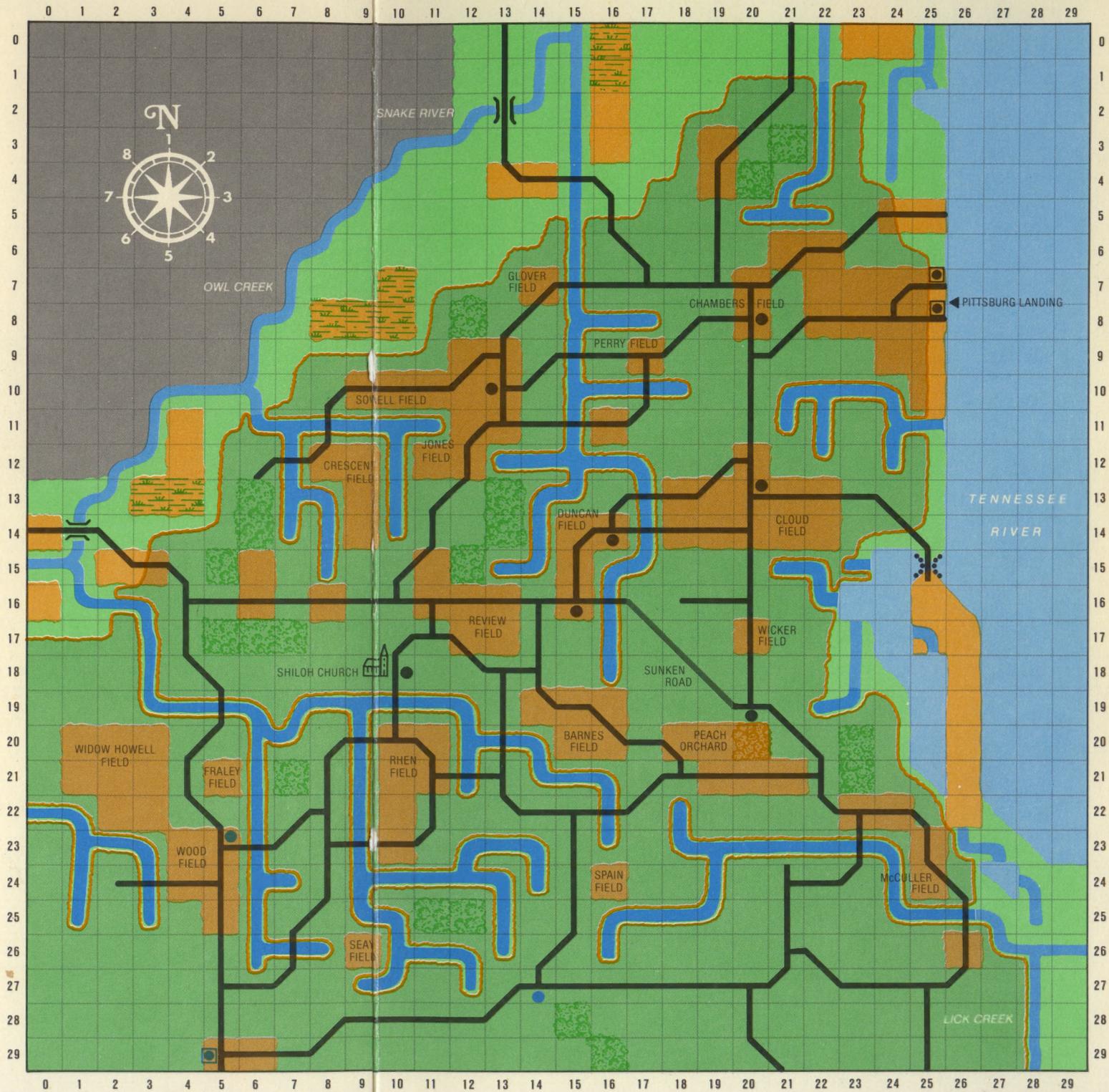
### Notes:

- Gunboats pay 1 OP per square.
  - Unit 107 (TENN ARM artillery unit with S24 guns) pays triple movement costs (including elevation).
  - Column or mounted mode road-to-road movement costs 1 operations point (2 operations points to enter a road in a ravine).
  - Operations points to enter Sunken Road in normal or dismounted state are doubled.
  - OP costs are doubled during the night turns.
  - Retreats and Advances have no OP cost.
- [1] Infantry units must be demibrigades (A and B reorganized) to receive road movement benefits.
- [2] In order to be able to move enemy ZOC to ZOC, a unit must be moving into a friendly occupied square.
- [3] Artillery units cannot change mode in a ravine square.
- [4] Units in woods pay 3 OPs to change into these formations. Units pay 2 extra OPs if in an enemy ZOC.
- [5] Units in woods pay 6 OPs to change into these formations. Units pay 2 extra OPs if in an enemy ZOC.

# SHILOH

## GRANT'S TRIAL IN THE WEST

- |  |                          |   |                            |
|--|--------------------------|---|----------------------------|
|    | ROADS                    |  | UNION<br>1000 points       |
|    | BRIDGE                   |  | UNION<br>3000 points       |
|    | RIVER                    |  | CONFEDERATE<br>1000 points |
|    | CREEK                    |  | CONFEDERATE<br>3000 points |
|    | STREAM                   | Lighter areas of a given terrain indicate Elevation 1.                            |                            |
|    | FORD                     | Darker areas indicate Elevation 2.  |                            |
|    | RAVINE                   |   |                            |
|  | SLOPE (with light woods) |   |                            |
|  | SLOPE (clear)            |   |                            |
|  | CLEAR                    |   |                            |
|  | LIGHT WOODS              |   |                            |
|  | HEAVY WOODS              |   |                            |
|  | SWAMP                    |   |                            |



## FIRE AND MELEE STRENGTH MODIFIERS

TARGET LOCATION	FIRE MOD.	MELEE MOD.
Clear	1.00	1.00
Heavy Woods	0.40	0.40
Light Woods	0.70	0.70
Woods/Church	0.70	0.70
Peach Orchard	0.70	0.70
Ravine	0.70	1.30
Stream	0.80	0.80
Swamp	0.80	0.80
Ford/Bridge	1.00	1.00
Higher Elevation	0.70	0.70
Sunken Road	0.50	0.70

FIRING UNIT'S LOCATION	FIRE MOD.	MELEE MOD.
Stream	1.00	0.70
Ford/Bridge	1.00	0.90
Ravine	1.00	0.60
Artillery in Woods	0.70	1.00
All Others	1.00	1.00

SPECIAL CONDITIONS	FIRE MOD.	MELEE MOD.
Target unit is flanked	1.50*	1.50***
Firing unit is disrupted	0.50**	0.50
Firing unit is routed	0.50	0.50
Firing unit out of ammo	0.30**	0.70

MODES	FIRE MOD.	MELEE MOD.
Normal	1.00	1.00
Column	0.30	0.30
Mounted	0.85	2.00
Routed	0.50**	0.50****
Unlimbered	1.00	1.00
Limbered	0.20**	0.50****
Dismounted	0.75	1.00

\* During Final Defensive Fire, the modifier is 0.5 for the flanked unit firing.

\*\* May only fire during Final Defensive Fire and with these modifiers.

\*\*\* The flanked defender in Melee and Final Defensive Fire has a modifier of 0.50. The flanker has a modifier of 1.50.

\*\*\*\* May only defend in Melee and with this modifier.

The Fire and Melee strength modifiers would support the following examples:

1. A target unit in woods on higher elevation than the firing unit would result in modifier of 0.49 (0.7x0.7) in the Fire Phases and the Melee Phases.

2. A target unit flanked by a firing unit in clear terrain would give the firing unit a 1.5 modifier

in the Fire and Melee Phases. In the Fire Phases, the flanked unit would fire with a 1.0 modifier (if it had a target) but would melee with a 0.5 modifier.

3. An artillery unit in woods firing at a unit in woods would receive a 0.49 (0.7x0.7) modifier.

### ADDITIONAL MODIFIERS FOR FIRE AND MELEE

**Leader Bonus:** Direct Modifier. A leader with bonus of 20 would multiply casualties inflicted by the unit it is with by 1.2.

**Target Density:** For fire combat, 1% more casualties per 50 men when more than 1000 men are in the target square. 1% less casualties when less than 1000 men. Maximum modifier of 1.4.

**Density of Firing Unit's Square** (Non-artillery): If over 1000 men are firing from the square, a modifier of 1% per 50 men over this number is subtracted from the firing strength (1200 men = .96 modifier). During melee, this modifier is 1% per 100 extra men for an attack-unit (1200 men = .98 modifier).

**Fortification Level:** The firing unit is penalized by 10% per level that the target is fortified. A fortification level of 5 would give a modifier of 0.5.

**Efficiency:** Semi-Direct Modifier. For every two points a unit's efficiency is below 100, its strength is reduced by 1%. Example: A unit with 600 men and an efficiency of 60 would have a strength equal to  $600 \times .80$  or 480 men.

**Fatigue:** Semi-Direct Modifier. Strength is reduced by 1% for every 2 points of fatigue. Fatigue of 20 would give a modifier of .90. Example: A unit with 1000 men and 20 fatigue would have an effective strength of  $1000 \times .9$  or 900.

**Command Control:** Direct Modifier. A unit's strength is multiplied by its command control. Example: A unit with 750 men and a command control of 1.3 would have an effective strength of 975.

**Artillerymen:** Each gun requires 16 artillerymen to fully support it. When artillery fires, it receives a modifier proportionate to the number of men it has to man its guns. A Union artillery unit with six guns would need 96 men to function fully. If it lost 19 men (20%), the unit's strength would be multiplied 0.8 to determine its effective strength (it would be at 80% of full strength).