

SCRIMMAGE RULES AND INSTRUCTIONS

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INTRODUCTION

The SCRIMMAGE computer game is based on a board game of the same name that was created in 1970 by two Boeing aerospace engineers, one of which is the developer of the computer game. SCRIMMAGE is based on the action, breaks, and strategy of American football and incorporates the concepts of speed, power, deception, and formation. Some of the board-game rules have been changed, but the computer game is very much like the board game and will provide enjoyment for teens and adults alike.

SCRIMMAGE is a game for two players; a football contest between Red and Yellow teams on a field 30 yards wide and 120 yards long (counting the two end zones). Only a 40-yard-long segment of the 120 yard field is displayed at any one time.

There are no kickoffs, punts, or field goals. There are only run and pass plays. A game always starts on the offense's 20-yard line. The starting offensive team and defended goal are randomly chosen for each game.

The rules of play are automatically enforced by the program. Invalid placements or movements of men will trigger pop-up error windows, requiring appropriate corrections.

Clicking the [RULES] button, available in the game's various windows, produces a scrollable pop-up window that displays these rules and instructions.

SETTINGS

When [Settings] is clicked, a window is displayed where "Limits on Squares per Turn" and "Replay Speed" (slow, moderate, or fast) can be specified, and where sound effects can be muted. The "Limits on Squares per Turn" apply only to new games. The limits for archived games were defined when those games were first played as new games.

"Squares per Turn" is the number of squares allotted for a team's turn. On each turn in a new game, the number of allotted squares is randomly calculated from the range of numbers defined by the limits. Each number in the range has an equal probability of being imposed. The default limits are 3 and 6, so the numbers 3, 4, 5, and 6 each have a 25% probability of being imposed. The pace and nature of the game is significantly affected by the "Limits on Squares per Turn".

OBJECTIVE OF THE GAME

The objective is to score a touchdown or safety to win the game (sudden death). The players alternate turns, moving the men on their eleven-man teams, in attempting to achieve this objective.

THE FIELD

The field consists of rows and columns of squares, separated by black vertical and horizontal grid lines. Each square has a width and height of two yards. The left edge of the field's 40-yard displayed segment is termed the "west" end, and the right edge is termed the "east" end. The top and bottom sides of the field are termed the "north" and "south" sides. The scrimmage line is indicated by a blue line, and the forward progress required for a first down is indicated by a yellow line. Yard markers are displayed at 10-yard intervals.

Except when the scrimmage line is within the defense's 20-yard line, it is positioned 10 yards (5 columns) from the edge of the window closest to the offense's goal. The displayed yard markers are adjusted laterally to account for this positioning of the scrimmage line. The displayed field segment is divided into 12 numbered zones, each a 5 x 5 mosaic of squares. These zones are used for pass plays.

THE MEN

The men on each team have various speeds as identified by their "shapes". There are five shapes, corresponding to speeds 2 through 6. A speed is the maximum number of squares a man can be moved on a given turn. A man's blocking ability depends on his power, which is related to his speed; slower men have more power. Power is calculated by subtracting speed from 6. Therefore the man with speed 6 has no power and is useless as a blocker.

Clicking the [Men] button, available in the game's various windows, produces a pop-up window that displays the speed and power of each man according to his shape.

On each eleven-man team there are two speed-2 men, three speed-3 men, three speed-4 men, two speed-5 men, and one speed-6 man.

Speed	Shape	Power
2		4
3		3
4		2
5		1
6		0

On the offensive line the speed-2 men are the "tackles" and are labeled T1 and T2. The speed-3 men are the "guards" and are labeled G1, G2, and G3. One speed-4 man is the "tight end" and is labeled TE. A speed-5 man is the "split end" and is labeled SE. The tackles and guards, distinguished by their square shapes, cannot move backward.

In the offensive backfield one speed-4 man is the quarterback and is labeled Q. Another speed-4 man is the fullback and is labeled F. A speed-5 man is the halfback and is labeled H. The speed-6 man is the tailback and is labeled T.

On the defensive team the five men with square shapes are labeled the same as their offensive counterparts. They too cannot move backward. The speed-4 men on defense are the linebackers and are labeled L1, L2, and L3. The speed-5 men on defense are the defensive backs and are labeled B1 and B2. The speed-6 man on defense is the safety and is labeled S.

THE LINEUPS

The Lineups at the start of a play are governed by the following rules:

Rule L1. The offensive guards and tackles must be placed on the column of squares just to their team's side of the scrimmage line.

Rule L2. The offensive ends must either be placed on the same column as the guards and tackles or must be placed in one of the three zones between 10 and 20 yards downfield (zones 7, 8, & 9 when the offense is moving eastward, and

zones 4, 5, & 6 when the offense is moving westward). This optional downfield placement of one or both ends is only valid when the offensive team is outside the defense's 20 yard line.

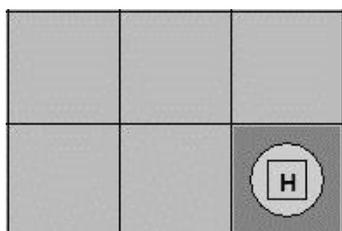
Rule L3. The quarterback must be placed behind the column of squares occupied by the offensive linemen, on the same row occupied by an offensive tackle or guard, but no more than 8 yards (four squares) behind the scrimmage line.

Rule L4. The other three offensive backs can be placed anywhere behind the column of squares occupied by the offensive linemen. However, an offensive back is an eligible ballcarrier only if he lines up within two rows of the quarterback's row.

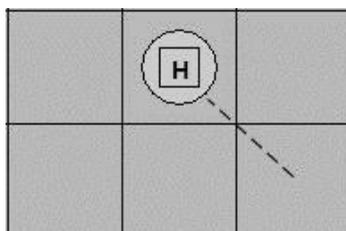
Rule L5. The defensive men can be placed anywhere on their side of the scrimmage line.

MOVING THE MEN

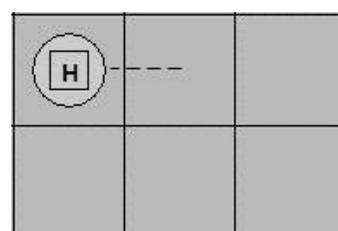
Moving a Man from one square to another is achieved by right-clicking the man to select him and then left-clicking the destination square or a sequence of way-point squares. Way-point squares are necessary when the path between the initial and destination squares is not a straight line. The man's path must be either a single straight line or a series of straight-line segments. Although it is not necessary, a man can be right clicked at the start of each straight-line segment.



Right-click the man. His square will change color.



Left-click a way-point square. The man will move to the square.



Left-click the destination square. The man will move to the square.

A **DIAGONAL** move counts as **TWO** squares. Any combination of diagonal and linear segments can constitute a valid move, provided that the total number of squares does not exceed the man's speed.

Movements of the men are governed by the following rules:

Rule M1. A man's move must be a straight line or a sequence of straight-line segments.

Rule M2. A man cannot be moved a number of squares greater than his speed (a diagonal move counts as two squares).

Rule M3. A man cannot move through a square occupied by another man.

Rule M4. A man cannot move onto a square occupied by a teammate.

Rule M5. A man must move onto a square occupied by an opponent to block him or attempt a tackle.

Rule M6. Two teammates must be moved (each one at anytime during a play) onto a square occupied by an opponent to accomplish a double-team block. A double-team block is successful if the sum of the powers of the blockers exceeds the power of the man being blocked.

Rule M7. Tackles and guards, offensive and defensive, CANNOT MOVE BACKWARD.

Rule M8. On each play the players take turns moving their men. The total number of squares moved by the men on a given turn must equal the allotted number of squares for that team's turn. An audible "click" is sounded when a turn is complete (this "click" is not sounded on a replay).

NEW GAME

To Begin a New Game, [Play a New Game] in SCRIMAGE's first window is clicked. The program randomly decides which team starts on offense and which goal is defended by the defense. The new game is started by clicking [Start the Scrimmage]. The offense begins with possession of the ball on its own 20-yard line, with a first down and ten yards to go for another first down. The offensive team retains possession of the ball until either:

- a) It fails to get a new first down in four plays (downs).
- b) A ballcarrier is tackled behind his own goal line, which gives the defense a safety and ends the game. It matters not that the ballcarrier may have intercepted a pass in his own end zone. If he is subsequently tackled in the end zone, the other team scores a safety. A "touchback" is not allowed.

- c) A pass is intercepted by the defense.
- d) A fumble is recovered by the defense.

THE PLAY SEQUENCE

Each Play consists of the following steps:

1. The offensive player aligns his men in a formation according to Rules L1 through L4. He then clicks [Then Click Here to Call the Play], which produces the play-selection buttons below the field display.



2. For a run play, the offensive player clicks [Q], [F], [H], or [T] to select the quarterback, fullback, halfback, or tailback as the ballcarrier. For a pass play, he clicks [1], [2], ...[12] to select the zone to which the pass will be thrown. The defensive player must avert or close his eyes when the offensive player calls the play.

3. The defensive player aligns his men on his side of the scrimmage line. When the alignment is completed, the defensive player clicks [Click When Done].

4. An audible "hut-hut" signals that it is the offensive player's turn to move his men in accord with Rules M1 through M8. The allotment of movement squares remaining is displayed below the field. The offensive player may be able to block some opposing men during his turn (blocking is discussed in a following section). The play is not yet revealed to the defense.

5. After the offensive player has used up his allotment of movement squares, the defensive player moves his men in accord with Rules M1 through M8. He may be able to block some opposing men or attempt to tackle a possible ballcarrier. The play has not yet been revealed to the defensive player.

6. After both players have had one turn, the type of play is revealed: either a run or pass, but the ballcarrier or pass zone is not yet revealed to the defense.

7. If the revealed play is a PASS, the quarterback is the ballcarrier until the pass is thrown. The quarterback may "throw" the pass immediately, or he may wait until a later turn to throw the pass. The PASS ZONE will not be revealed to

the defense until the pass is thrown. If the revealed play is a RUN, the ballcarrier will not be identified to the defense until both players have completed two turns.

The players continue taking turns until the play is ended by a tackle, fumble recovery, safety, or touchdown.

PASS PLAY

A Pass is thrown by the offensive player clicking [Throw Pass] and then clicking any square in the called pass zone (highlighted). When a square in the highlighted pass zone is clicked, the ball moves from the quarterback to that square. The offense gets to move first after the pass is thrown. During the move, the offensive player attempts to move an eligible receiver (end or back) onto the square with the ball. The defensive player then attempts to move any one of his men onto the square with the ball. Both players must use up their square allotments on these moves. There are four possible outcomes:

1. The pass is completed if the offensive eligible receiver gets to the ball's square and no defensive man is able to get to the square.
2. The pass is intercepted if no offensive eligible receiver can get to the ball's square, and a defensive man is able to get to the square.
3. The pass is incomplete if neither an offensive eligible receiver nor a defensive man is able to get to the ball's square.
4. The outcome is random if both an offensive eligible receiver and a defensive man are able to get to the ball's square. The outcome probabilities are:

incomplete pass (50%)
completed pass (25%)
intercepted pass (25%)

The following rules apply to pass plays:

Rule P1. A pass must be thrown to a square in the called zone, except when the "scramble" option allows a throw to any zone.

Rule P2. A pass can be thrown to an occupied square, except for squares occupied by the throwing quarterback, offensive tackles, and offensive guards.

The Quarterback may choose to "scramble" on a pass play by clicking [Scramble]. The resulting scramble option is random, with the following probabilities: Quarterback must run the ball (40%), must immediately throw pass to any zone (20%), may shift his set position by a maximum of four squares (20%), may shift his set position by a maximum of three squares (10%), or may shift his set position by a maximum of two squares (10%).

BLOCKING

Single or Double-Team Blocks can be used by either the offense or defense to remove opposing men from the board. A single block is made by moving a more powerful man onto the square of an opposing man. A double-team block is made by moving two men onto the square of a man having less power than the total power of the two blockers. The two moves in a double-team effort need not occur on the same turn, as long as they occur during the same play. When the first blocker with insufficient power is moved onto the square of an opponent, the opponent's color becomes paler, indicating that he is vulnerable to the second half of a double-team effort. However, the blocking power of a paler man remains unchanged.

All men involved in a successful block disappear from the field. When the power of a blocker or blockers is insufficient, only the blocker(s) disappear from the field. The following rules apply:

Rule B1. An attempt can be made to block any man at any time during play action, except when a pass has been thrown and the men on both teams are moving in an attempt to catch the pass.

Rule B2. If the defense inadvertently attempts to block the ballcarrier (i.e., before the ballcarrier has been revealed) the attempt is treated as a tackle attempt.

Rule B3. If the ballcarrier is moved onto the square of an opponent, it is as if the opponent were moved onto the square of the ballcarrier, and it is treated as a tackle attempt.

TACKLING

A Tackle Attempt is made when a defensive man is moved onto the square of the ballcarrier or when the ballcarrier is moved onto the square of a defensive man. In earlier versions of SCRIMAGE the powers of the tackler and ballcarrier did not affect the outcome. In this program version, the power

advantage of the tackler does affect the outcome. The power advantage (PA) ranges from -2 to +4. The probabilities of the various outcomes of a tackle attempt are shown in the following table:

PA	Fumble	Tackle-2	Tackle-1	Tackle	Tackle+1	Tackle+2	Miss
-2	0.000	0.048	0.095	0.143	0.190	0.238	0.286
-1	0.048	0.079	0.111	0.143	0.175	0.206	0.238
0	0.095	0.111	0.127	0.143	0.159	0.175	0.190
1	0.143	0.143	0.143	0.143	0.143	0.143	0.143
2	0.190	0.175	0.159	0.143	0.127	0.111	0.095
3	0.238	0.206	0.175	0.143	0.111	0.079	0.048
4	0.286	0.238	0.190	0.143	0.095	0.048	0.000

A "Tackle" outcome means that the ballcarrier is tackled and makes no forward progress. A "Tackle-2" outcome means that the ballcarrier is driven back two squares (4 yards) from the point of contact, A "Tackle+1" outcome means that the ballcarrier drives forward one square (2 yards) past the point of contact, etc.

For half the fumbles the ball will come to rest four squares (8 yards) north of the point of contact. For the other half the ball will come to rest four squares south of the point of contact.

In earlier program versions, the outcome of a tackle attempt was not affected by the powers of the tackler and ballcarrier. Nevertheless, the games that were archived with earlier program versions will replay correctly on the new program version.

When the ballcarrier is driven back, the forward progress rule in regular football does not apply. The result of the tackle attempt can be thought of as the ballcarrier being tackled while he is giving up yardage in an attempt to avoid the tackle.

When there is a successful tackle or a fumble, both the ballcarrier and tackler disappear from the field. When there is a missed tackle, only the man attempting the tackle disappears from the field.

The following rule applies to tackle attempts:

Rule T1. Any defensive man can attempt to tackle the ballcarrier at any time during the defense's turn. If an attempt is made (before the ballcarrier is revealed) on an offensive back who is not the ballcarrier, the move is treated as an attempted block.

FUMBLES

When a fumble occurs, the first man that moves onto the square with the ball recovers it (if the fumbled ball falls on an occupied square, the man on that square automatically recovers it). The team that moves first in a recovery attempt depends on whether or not the defense exhausted its allotment of squares to cause the fumble. If not, then the defense gets to move first in the recovery attempt, using the squares remaining in its allotment. Otherwise the offense gets to move first.

INSTANT REPLAY

An Instant Replay of a just-completed play is initiated by clicking [Instant Replay]. On the replay, the motion of the men on the field is "animated". During the replay, no mouse button should be clicked.

ARCHIVING A GAME

At the conclusion of a game, whether or not the game has been completed, there is an opportunity to name the game and save it in the archives.

REPLAYING AN ARCHIVED GAME

Any archived game can be replayed in part or in its entirety by clicking [Archived Games] in SCRIMAGE's first window.

EXTENDING AN ARCHIVED, INCOMPLETE GAME

An incomplete archived game can be extended (to completion if desired) by replaying the last play and then clicking [Extend the Game].