

Ultimate!
GOOLF™



INSTRUCTION
BOOKLET



LOADING INSTRUCTIONS PC & COMPATIBLES

CONTROLS

Pressing ESCAPE after selecting play will allow you to set up your shot again.

Pressing F10 will cancel the current game and revert back to the control selection screen. This option enables you to change controls or the course you are playing.

Pressing keys Q,U,I,T simultaneously will return the game to DOS.

On scoreboard and club deselection screens, the right mouse button (FIRE 2), is used instead of the SPACE BAR.

On select best lie, the right mouse button (FIRE 2), is used to alternate between players, the left mouse button (FIRE 1), is to select the highlighted player.

In CGA mode keys F1 and F2 can be used to change palette, this is only available during the game.

INSTALLATION

Onto Floppy Disk

NOTE! YOU WILL NEED A BLANK FORMATTED DISK.

From the DOS prompt, put the GAME DISK in drive A, type:
a FORMATTED disk in drive B. On a single drive machine
Drive B is the destination drive, type:

A: <return>

INSTALL <return>

& follow the on screen instructions.

Onto Hard Disk

From the DOS prompt, put the GAME DISK in DRIVE A,
type:

A: <return>

INSTALL <return>

& follow the on screen instructions.

ATARI ST

Set up your computer as outlined in your user's manual. Switch on your TV/monitor and then your computer. Insert the game disk into drive. The game will now load automatically.

CONTROLS

If using a mouse, ensure that the mouse is plugged into port 0 and if using a joystick this should be plugged into port 1.

The keyboard controls are the cursor keys, and the INSERT key is used for FIRE.

Pressing ESCAPE after selecting play will allow you to set up your shot again.

Pressing F10 will cancel the current game and revert back to the control selection screen. This option enables you to change controls or the course you play on.

An additional feature of the ST version not mentioned in the manual is the option to Zoom in and out on the map screen by the use of the '+' and '-' icons displayed when in map mode.

GREG NORMAN'S ULTIMATE GOLF



Introduction

Golf has always been a difficult game to simulate accurately on a computer, due to the vast number of factors to be taken into consideration. In real life the simple flight of the ball is affected by a multitude of parameters, ranging from the physical characteristics of the ball itself through to the atmospheric conditions at the time of flight.

When we were designing Ultimate Golf we decided that the only way to produce a truly realistic simulation was to include as many as possible of those factors. We took real holes and real courses, and created accurate 3D models, including height and vegetation information; we simulated global weather conditions for all 12 months of the year; we took the best professional advice on how to create not only a golf game, but a teaching aid as well. Now, eight man-years later, we believe that the product you hold in your hands is worthy of the title Ultimate Golf.

How to use this manual

Ultimate Golf can be played on many levels, from a simple arcade game right up to a full-blown simulation of all the conditions to be found on a real golf course. Because of this we've divided this manual into three parts: the first is a simple 'walk through' of the one-player game, and gets you going as quickly as possible; the second is a fuller description of

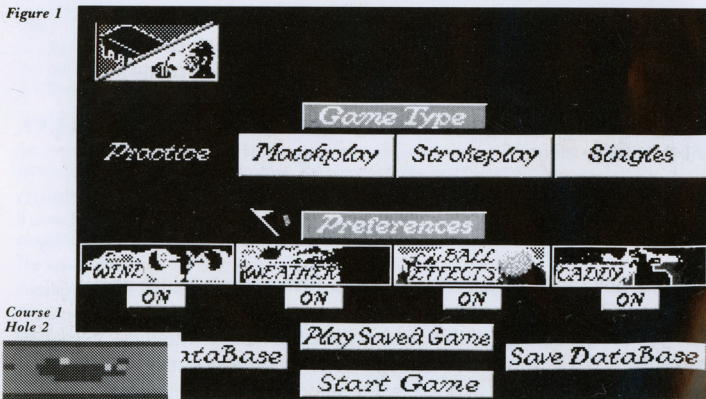
the game's features; the third is a more detailed and technical explanation of the finer aspects of the program. Part One can be skipped, if you wish, since all the information in it is also contained in Part Two.

If you're impatient to get out on the course and tee off we suggest you go straight to Part One. Then you can explore some of the game's deeper features in Part Two and, when you're good and ready, delve into Part Three to hone your game to perfection.

PART ONE A Quick Round

Refer to the loading instructions for your particular machine, then follow the on-screen prompts to select joystick, mouse or keyboard. You will then be prompted to select the course on which you will play. After selecting the course the main option screen will be displayed (Figures 1 and 3).

Figure 1

Course 1
Hole 2

Move the pointer over the PLAYER icon and press fire. Move to NAME, press fire and then type in your name. Press RETURN and then press fire on ACCEPT. Player 1 is now set up.

Now move the pointer over the caddy icon and press once to de-select. De-selecting the caddy will enable the game to be played faster.

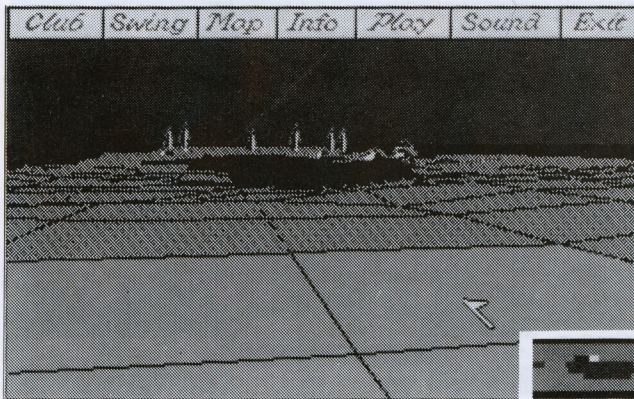
Now click on START GAME. The club selection screen will appear. As you are only allowed to carry 14 clubs you must **deselect three** of them. We suggest that you click on the 2, 4 and 5 Wood icons. You will now find yourself on the first tee at the beginning of the course. (Figure 2).

The INFO menu will now drop down. This menu shows which club you are using, what its range is, distance to the hole, and other information about the hole.

Move the pointer onto PLAY and click. Greg Norman will appear on screen, ready to take your shot, alongside a power meter. The power ranges from 0% of the club's normal power through to 112.5% (be



Figure 2

Course 1
Hole 3

warned – overpowering is to be used with caution!) Holding down the button or key will cause the power level to rise. Release the button when you have reached the desired level for the particular shot.

The bar will now begin to fall from the top of the meter. Before it reaches the bottom you must align your shot. To do this you use the direction meter, found below the power meter. The direction meter has two needles, one of them stationary and normally pointing straight ahead, the other swinging left and right. To make sure your shot goes straight ahead, press fire when the two needles coincide. If the two lines do not coincide when you fire, then your shot will veer left or right accordingly. Repeat the process until you reach the green.

Putting is carried out in the same way as driving, except that there is no direction meter. If you do need to deviate from a straight shot to compensate for any slope on the green you should deselect all the menus so the screen is clear, then press FIRE while the cursor is over the play area; a cross will appear on screen which you can move around to select the direction of your shot.

After referring to the loading instructions for your particular machine, load the game and follow the on-screen prompts to select joystick, mouse or keyboard.

You are then asked to select a course. On the disks supplied there are two courses, Gremlin and RAC; if you wish to play one of these, press 1 or 2 at the prompt. If you have further course disks, you may insert one of these.



SETTING UP PLAYERS

Ultimate Golf can be played with up to four players, each of which can be controlled by either a human player or the computer – giving you the novel facility of watching four professional golfers play a round of any game type (except practice). To introduce a player, select one of the player icons. The player and database control screen will then be displayed.

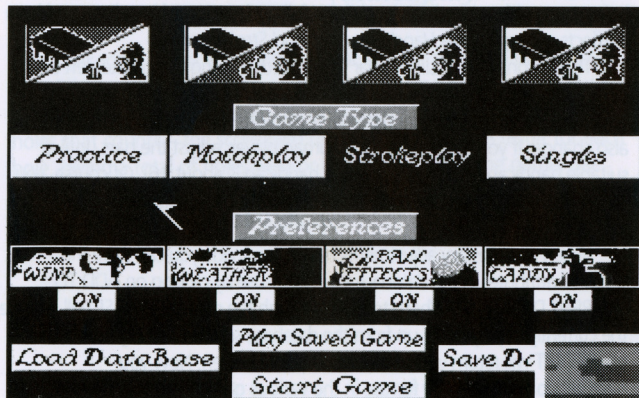


Figure 3

Course 1
Hole 2

The icon at the top left of the screen selects whether the player is to be controlled by the computer (the chip icon) or by a human player (the face icon). The name (if any) of the player is entered by clicking on the name icon, then typing in the relevant name (Maximum 12 characters, including spaces). If you do not enter a name then players will be referred to throughout the game as Player 1, Player 2, and so on.

Initially the game loads with a predefined database of 10 players, with room for a total of 50 players available. When a name is entered an automatic check is made to see if a database entry for that name has already been set up. For example, typing in 'Greg Norman' will bring up the factors of experience, skill and so on relating to Mr. Norman himself. Entering a blank name allows you to step through the list of players using the Forwards and Backwards icons on the Database control screen.

The Experience, Stance, Grip, Swing and Fitness factors are used only to set up the skill level of the computer-controlled players. They bear no relation to the gameplay for the human players, their only use for human players being to provide a handicap level (for a full explanation of handicap and how it affects gameplay, see *Handicaps, Pars and Stroke Index*).

These icons are all 'sliding-bar' controlled; moving the pointer left and right with Fire depressed increases or decreases the level of the factor. As each factor changes, the handicap level (shown at the top of the screen) will also change. If you are setting up a human player, adjust the bars until a suitable handicap is shown (a suitable handicap is about 16). Of course, you are free to set up computer players to be as good or as bad at the game as you wish...

When all necessary adjustments have been made you can store the personal attributes in the database for further use by clicking on ADD TO CURRENT DATABASE. When stepping through the database ERASE will remove the currently displayed set-up from the database screen. Clicking on ACCEPT will return you to the main options screen. Now you have set up a player ready for use in the various game types...

This is strictly a one-player game. It gives you a chance to work on your game without the pressure of competition and provides you with total control of all the course parameters; you can walk around the course, replay shots, change holes and even reposition balls (if you think it's *absolutely* necessary). After each shot your score is entered on the score card, and the total score for the course is given at the end of the game.



Strokeplay

Choose this option if two or more players have been selected. Like the practice game the number of shots taken for each hole is entered on the score card, and the total score for the course given at the end of the game.

Matchplay

Like Strokeplay, this is a scoring method, but for only two or four players. The difference is that instead of the scoring being based on the number of shots taken for the course it is the winning (or losing) of individual holes that counts – the score card displays only the final result for each hole, giving a total of holes won or lost at the end of the game. See *Handicaps, Pars and Indexes* for an explanation of the different strategies involved in Strokeplay and Matchplay.

Initially, the fourth game type icon will display Singles. Clicking on this will change the display to one of the other game types – all of them team games for four players only. These team games are all played with Players 1 & 2 versus Players 3 & 4 with scoring as either Matchplay or Strokeplay.

A **Fourball** game is where each player plays one ball as per normal, but where only the best score from each team is entered onto the score card at the end of each hole.

A **Foursome** game is played with just two balls, the players in each team playing alternately. Players 1 & 3 start off.

A **Greensome** game is played in a similar manner to a foursome except that all four players tee off and then the best of each team's shots is chosen to finish the hole.

N.B. The options for changing position, replaying shots, and so on, are available only in practice mode.

Initially all game preferences are switched to ON. To toggle any of them ON or OFF, click once on the relevant icon.

Wind

This decides whether or not your ball will be affected by the wind. Obviously, a strong wind coming towards you will decrease the length of the shot, whereas a mild wind blowing from behind you will slightly increase the distance the ball will travel.

Weather

The distance the ball will travel is also affected by the climatic conditions: whether or not the grass is wet, and so on. See *Where, How Far and Why* for a further discussion of ball flight and how it relates to climatic conditions.

Ball effects

This enables or disables the effects generated if the ball is spinning. If it is disabled then BACK and SIDE spin cannot be adjusted within the SWING menu.



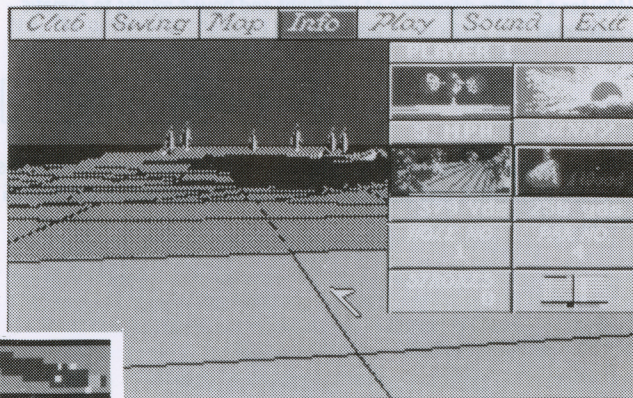
When the caddy is enabled it will recommend the correct club to use for each shot, and will also select IN, OUT, HOOK and SLICE. It works out exactly what needs to be done to make the best shot, i.e., curve balls around trees, compensate for the wind, and so on.

Now that you've set up a player, chosen a game type and selected your game preferences you are now ready to click on START GAME, or on PLAY SAVED GAME

PLAYING THE GAME

Having clicked on 'start game', you will then be asked to DE-SELECT three of the available clubs. 17 clubs are available to choose from, but you can only carry 14 of these around the course with you. We suggest that you de-select the 2, 4 and 5 Woods. Click on the relevant club icons to deselect them then continue to the main game display.

Figure 4



Course 1
Hole 9

At the top of the screen is a menu bar. To access any of the options, move the pointer to the relevant icon and click on it. At the start of each player's turn, a window drops down automatically (Figure 4). This is the info menu.

Info menu (Figure 4)

This displays all relevant information on the hole and the environmental conditions, except for the wind direction, which is displayed on the SWING menu. If you haven't got the wind and weather options turned on, the wind speed will be displayed as 0 MPH and the weather will always be sunny.

The distance to the hole is displayed, along with the currently selected club and the maximum distance the ball will travel under ideal conditions using that club. Also shown are the hole number, the par for the hole (the 'ideal' number of shots needed) and the number of strokes taken already, as well as the score-card icon, which brings up the score-card when you click on it.

If you are in practice mode, other options are also available:

- RESTART HOLE will take you back to the tee of the hole you are currently playing.
- REPLAY SHOT allows you to take the last shot again.
- CHANGE HOLE brings up a map of the whole course, allowing you to click on the hole that you wish to play.
- MOVE acts in the same way as the WALK section on the MAP menu but instead of just allowing you to see what other parts of the hole look like, it actually moves the ball as well.

Having found out the distance to the hole, move to the CLUBS icon and click.

Clubs (Figure 5)

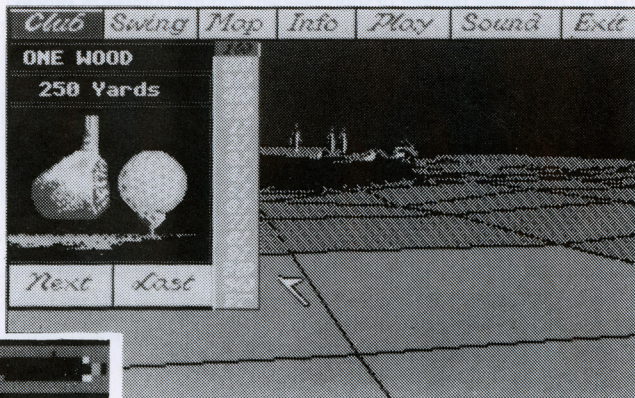
All 17 clubs are listed on the right hand side of the window. A picture of the club currently selected is displayed in the main part. Below this is the ideal distance that the ball will travel when hit by this club. Only 14 of these clubs are available to you.

As well as the club type, the terrain that the ball is lying on is displayed along with the condition of the grass (whether wet or dry). For an explanation of how terrain and weather affects the play of the ball, see the section *Where, How Far and Why*.

To change clubs, either click on one of the listed clubs or click on one of the NEXT/LAST icons to increment/decrement the club number. A list of average distances and special considerations is given in the section 'Clubs'.

To now see what the hole looks like, click on MAP

Figure 5



Course 1
Hole 13

Map (Figure 6)

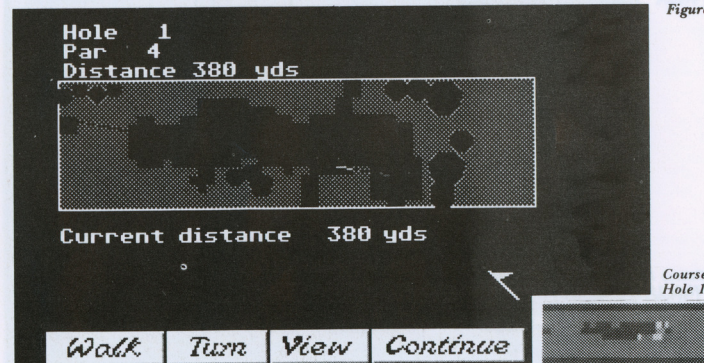
This brings up an overhead view of the hole, complete with all the course features (trees, sand, etc.) and hole information. This option also allows you to 'walk around' the course, and to change your viewing angle before playing a shot.

To look at other parts of the course, click on the WALK icon. Holding down Fire, move the pointer to any place on the map and, when positioned, click again. Clicking on VIEW then shows you what the course looks like from that point, looking towards the hole.

To look in a different direction, click and hold on TURN. When you then move the pointer over the map, a line will be drawn between your 'walked' position and the pointer. Releasing the button and then VIEWING gives you the course view in the selected direction.

If you TURN without WALKing, the course view will have changed direction when you exit from the map. This feature can be used for fine adjustments of the pin direction when putting, or for playing round dog legs, trees and other obstacles. Click and hold on TURN as before, then move the cursor to turn around. To exit from the map, click on CONTINUE, then move to..

Figure 6



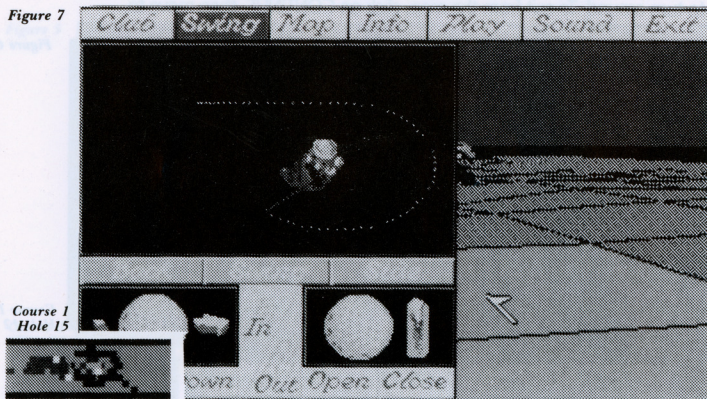
Course 1
Hole 12

The amount of spin applied to the ball and the swing arc of the club both affect the flight path of the ball. This menu allows you to change these factors to produce various effects. Altering one of the three parameters (backspin, sidespin and swing arc) using the icons will change the diagram at the top of the window to show the new flight path. Again, a full explanation of the mechanics behind the ball's flight path is given in the section *Where, How Far and Why*. The best route to full understanding is by experimentation.

Also shown on this menu is the direction of the wind, to help you decide which way you want the ball to go, so as to counter the wind's effect. The wind arrow is shown relative to the golfer on the SWING menu, and the direction of the wind is the direction of the head of the arrow.

When you have altered the ball's path, and then chosen to play with SOUND either on or off, you are ready to select...

Figure 7

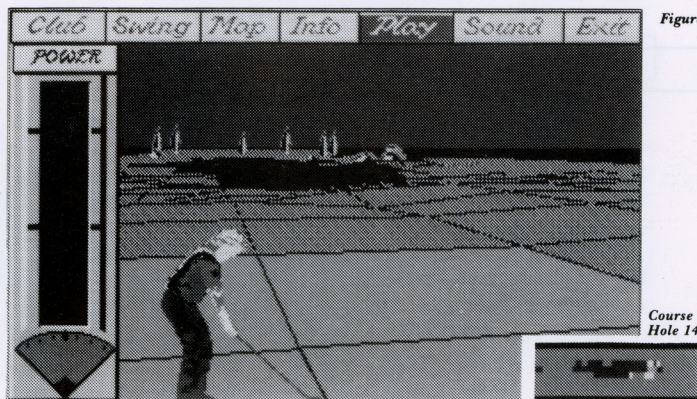


A power bar is displayed alongside the start of a digitised animation sequence of Greg Norman ready to swing. This bar ranges from 0% power at the bottom through to 112.5% power at the top. The extra power, although sometimes necessary, should generally be avoided as it will tend to magnify any errors in direction.

To play a shot, hold down the button and the power level will rise from the bottom. Release the button at the desired power level, and the bar will start to fall to the bottom. The time this bar takes to reach the bottom is the time you have to align your shot. You must make your shot before the bar reaches 0%.

Below the power bar is a direction indicator with a swinging line and a stationary line. To align your shot, fire or click when the two lines coincide. If the two lines meet before you click, don't worry. You have at least another two tries before the bar reaches the bottom. If you miss, the ball will veer off in the direction of the miss. (it will be 'hooked' or 'sliced').

Figure 8



Your ball will now be sent winging its way towards the hole. Your new position will then be displayed. Go to INFO, then CLUBS, then MAP and SWING if necessary, and play your next shot.

Once on the green, shots are played in exactly the same way, except that the direction meter is not present on the power bar. Instead, deselect all menus and press Fire anywhere over the play area. A direction cursor will appear to change the direction of the putt. Move the cursor left or right to align your shot, and then press play to select your power level as before.

At the end of the 18 holes, your score card for the whole course will be displayed, showing how many strokes under or over par you took for the course. If there is more than one player, pressing space will show you the second player's score card. Keep pressing space to display any other players' score cards or to wrap back round to your own. Press fire to take you to the game options screen, ready to play another round of Ultimate Golf.

Exit

At any point in the game, pressing on EXIT will give you the option of either restarting the game, saving your current position, leaving the game altogether or simply continuing with the current game. Follow the on-screen prompts to save the game, but remember not to save the game to the game disk itself.

The only important difference to normal gameplay when playing a Greensome is that after each team has teed off, and each of the four players has played a shot, a decision must be made as to which ball is going to be used to continue the hole. For each team, the map of the hole is displayed showing the position of both balls, and a decision box for each ball will appear, giving their respective distances from the hole. The balls will be displayed with a number by them. Statistics related to each ball are printed at the bottom of the map. Click on the player name to make a selection.



TECHNIQUES, STRATEGIES AND RULES

Now that you've learned the mechanics of playing Ultimate Golf, there are a few things we think you should bear in mind, whether playing golf on a computer or on a golf course.

Play

When you are teeing off, your basic aim is to get to the green with as little fuss as possible. As Greg Norman says, 'To my mind, the most important shot in golf is the drive. Hit it well, and you have a jump on the hole, an edge on your opponent. Hit it poorly, and you'll be scrambling all the way to the green.'

Remember that most course designers put the traps and hazards in front of the green, in an attempt to catch out the cautious player. If you are driving for the green, attempt to overhit rather than underhit the ball, as it is less likely that you will get caught in a trap.

When playing from a bunker, you must use a high-lofted club or the ball will go nowhere. Usually, a sand wedge is the best choice, although in certain circumstances – for instance, when you want the ball to roll further on the green – a high iron such as an 8 or 9 could be used. Remember that shots from the bunker need extra power.

In windy conditions, it is likely that the ball will be deflected off course. The amount of compensation necessary is something you will only pick up through experience, but the following basic rules always apply.

In a headwind (with the wind coming towards you), you need more power than usual. The reverse applies to winds that are coming from behind you.

In a crosswind (from right to left or vice versa), the aim is to allow for the wind by playing the shot more to one side, or by curving the ball. For example, if you are playing a shot where the wind is going from left to right, either aim the ball more to the left than usual, or put a lot of sidespin on it so as to hook the shot, making it curve over to the left. The net result will be a straight shot. See the section on *Where, How Far and Why* for more details on ball trajectories.

In general, you should try not to overpower the club. If you have to use 100% or more of the club's power to attain a certain distance, then you are probably using the wrong club, and should select one higher than the current one. This may sound rather obvious, but very often the tendency is to pick the club whose maximum distance matches the distance to the hole. Bearing in mind the earlier advice about playing towards the green, it is usually better to play a more controlled shot with a longer club than to take the risk of overpowering a shot, or hitting it just below maximum power, and then landing in a hazard.

If extra distance is necessary, however, one way of achieving it is by hooking the shot. For reasons explained later on in this manual, a hooked shot travels further than

a straight shot. But make sure that you compensate for the curve with your swing, or you will find yourself in a stickier situation than if you had just played a short straight shot.

Hooking and slicing can also be used to 'minimise your losses' when playing onto the green. If you mis-hit a straight shot, the result could be a ball that lands anywhere, whereas mis-hitting a deliberately curved shot results in a ball which, although in the wrong place, is still moving in the direction of the hole, thus giving you a smaller error margin.



Strategies

Depending on the game type you are playing, different strategies will be necessary when in competition with other players. In Strokeplay games, every single shot counts, so your basic plan should be to play as simply and efficiently as possible. If, for instance, your ball is lying in heavy rough quite a way from the hole, it would be better to play a simple shot onto the fairway so as to give yourself an easy shot to the green rather than aiming for the green straight away, as a bad shot then may cost you another two or three strokes.

In Matchplay games a lost hole is a lost hole, irrespective of the number of shots taken; even if you take 100 shots to get to the green, you will only be one point down. So if an attempt at the green is necessary to win the hole, then go for it! You can't lose anything by trying, and it could be the shot that snatches the hole from under your opponent's nose.

Of course you should use your common sense in these situations, and attempt to avoid the obvious pitfalls of the course. On the whole, you will fare better if you take two safe shots round an obstruction rather than one dodgy one over it.

HANDICAPS, PARS AND STROKE INDEXES

The handicapping system is a method of allowing for the skill and experience of different golfers, so as to ensure a degree of fairness in competition. A novice player with a high handicap will be given a 'stroke allowance' on a golf course, enabling him to compete more effectively with an expert player with a very low handicap.

Handicaps start at 28 and gradually work their way down to 0 ('scratch'). Every time a golfer plays in a competition, his handicap is altered depending upon his score for the course. If the score is lower than the 'allowed' score for his handicap level, then the handicap is reduced. Conversely, if the score is higher than allowed, then the handicap is raised.

This is where Ultimate Golf's STROKE INDEX comes in. On the score-card, beside the par for each hole, you will see the stroke index (the S.I.) for the hole. This is the handicap level at which, if your handicap is greater or equal than it, you are given an extra, uncounted shot for the hole. Thus, if you have a handicap of 17 and the S.I. for the hole is 16, your score for that hole will be reduced by 1.

PARS are the expected average score for each hole. Basically, a par is calculated from the hole's distance. Two shots are allowed for the putt, and when this is added to the amount of strokes needed to get to the green, the result is the hole's par. If the distance from tee to hole is (roughly) under 210 yards, then one shot is allowed to get to the green, and the hole has a par of 3. Holes between 210 yards and 400 yards are normally par 4, while anything over 400 yards is usually a par 5, giving you three shots to reach the green from the tee. Holes with a par of 6 do exist, but are very rare.

Working out your handicap

If you are interested in working out your Ultimate Golf handicap accurately, you will need to keep a record of your score each time you play. When you first play, you should give yourself a handicap of 28. Then, every time you finish a course, the number of strokes over or under par you are (your NET score on the score-card, having taken the S.I. into account) determines how far up and down your handicap should go.

There are four categories of handicap – each with their own adjustments, listed below.

HANDICAP 0 - 5	Category 1	= 0.1 strokes
HANDICAP 6 - 12	Category 2	= 0.2 strokes
HANDICAP 13 - 20	Category 3	= 0.3 strokes
HANDICAP 21 - 28	Category 4	= 0.4 strokes

So, if you are in category 3, every stroke under or over par at the end of the course is multiplied by 0.3 to give you the adjustment to your handicap. Similarly, if your handicap is 4, each shot over or under par adjusts your handicap by 0.1 either up or down.

Although decimal points are stored for further adjustments, you normally talk about your handicap as being the nearest whole figure to it. So a handicap of 15.5 is treated as a handicap of 15, whereas 15.6 is treated as a handicap of 16. Similarly, a handicap of 12 could refer to anywhere between 11.6 and 12.5.

After a few games, your handicap should level out, as it gets harder to move down the lower you go.



The handicapping system applies in a slightly different way if you are playing in a competition. In a singles game using strokeplay scoring, each person's handicap allowance applies as usual, with the extra shots being included if your handicap is at or above the level of the S.I. In Matchplay scoring, however, each player's handicap is set at 75% of the difference between their handicap and the top handicapped player, who has his handicap set to 0. So if 4 players of handicaps 3, 7, 12 and 11 decide to play a fourball game, their handicaps would be treated as 0, 3, 6 and 6 for the duration of the game. Team games also have different handicapping systems, listed below.

GREENSOME

Matchplay 75% of the difference between the handicap totals of each team is allowed for the highest handicapped team; the other team being 0.

Strokeplay Each team has a handicap of 40% of the top handicap in that team and 60% of the lowest handicap

FOURSOME

Matchplay 37.5% of the difference between the combined total for each side is allowed for the higher team, the lower team again being treated as scratch.

Strokeplay Each team has its average handicap, ie: 50% (player 1+ player 2)

FOURBALL

Matchplay As in singles, each player is given 75% of the difference between his score and that of the lowest handicapped player, who is treated as a handicap 0.

Strokeplay As in singles, each player is given his full handicap allowance.

How far the ball goes, and in what direction, is dependent upon a number of factors. The first and most obvious is the club used to hit the ball.

Loft Angle

Different clubs, as well as different weights, all have different loft angles – the angle that the head makes with the neck of the club. This means that different clubs will hit the ball at different angles. The steeper the angle that the ball makes with the ground, the greater the ratio of vertical to horizontal velocity.

In other words, the higher the ball goes, the less distance it will travel. This is why, although a 1 iron is the same weight as a 9 iron, it will project the ball further if given the same velocity.

Spin

The spin applied to the ball also has a significant effect on the flight path of the ball. There are basically two types of spin – backspin and sidespin.

Due to the drag factors applied to the ball when it is in the air, more backspin generally means less distance as the ball spends less time in the air, therefore 'choking' its flight. Also, when the ball lands it will virtually come to a halt, as the ball is spinning in the opposite direction to the direction of travel, thus restricting its bounce and preventing it from rolling.

This is more often than not a good thing for the player, as it means that shots can be placed to land in exact positions, instead of rolling forwards – something you have little control over.

Sidespin

Obviously there are two types of sidespin; left and right (clockwise and anti-clockwise). Imparting spin to a ball means to open or close the face of the club, so as to hit the ball more on one side than the other. This also changes the loft angle of the ball and therefore changes the distance that the ball travels.

A ball that is spinning anti-clockwise will tend to veer off to the right, or slice, while a clockwise spinning ball will veer to the left, or hook. Slicing the ball lifts it higher than normal, thus decreasing its distance, while hooking gives a shallower loft angle and so sends the ball further.

Angle of swing

These effects are normally used in conjunction with the angle of swing of the club so as to bend the ball round trees and other hazards. The angle of swing determines in which direction the ball is hit, and so a combination of a swing one way and a spin in the opposite direction will produce curved flight paths, enabling you to skirt obstruction and approach greens from different angles.

Ball positions

Another factor to take into consideration, as well as how the ball is hit, is where the ball is hit from. If the ball is in light rough, (slightly more overgrown than the fairway), then the contact between the club and the ball is interfered with by blades of grass, and the friction between the ball and the ground is more marked than usual. This produces a lessening of the backspin applied to the ball, and therefore the ball will go further.

The same effect is also seen on the fairway if the

ground is wet. This shot, with less backspin, is known as a flyer. (To give a famous example: Greg Norman once played a 300 yard shot with a 5 iron from the rough due to this effect).

Normally, you should use a club 1 or 2 higher than usual when playing from light rough or from a wet fairway to produce the same distance as you would when playing from a dry fairway – a 7 iron instead of a 5 iron for example.

On the other hand, when the ball lands in heavier rough (or even in wet light rough), it tends to embed itself, making low-angle shots very difficult. In this situation, the only way out is to use a club with a very high loft angle (a pitch wedge or a sand wedge) to get under the ball and hit it back onto the fairway. This is known as a floater.

This shot, played with a wedge (usually a sand wedge) is also necessary when the ball lands in a bunker, as again the ball tends to embed itself, making it virtually impossible to hit it from underneath.

Wind

Wind of course also plays a part in messing up an otherwise perfect shot. Because of the variable nature of this phenomenon, there are no hard-and-fast rules on compensating for the wind. Obviously, if the wind is from behind you then your shot will usually be longer and vice versa if the wind is blowing towards you.

But the wind speed too determines how your ball will be affected. The solution to this problem is found only through experience; the more you play, the more able you will be to estimate how to play a shot so as to take advantage of the situation.



Hooking and slicing

Hooking and slicing can be used to your advantage when playing in a crosswind, as the tendency for the ball to curve one way will cancel out the effect of the wind blowing in the opposite direction. Again, how much you should curve the shot is something that can only be learned through experience.

Height

The only other factor to mention is that of height. Driving from a tee which is above the fairway will result in a longer shot than driving from a low tee. Again, how much the height of the terrain will affect your shot is something that can only be estimated through experience and observation.



	Clubs	Average Distance	Loft Angle
Woods	No.1	250 yds.....	12°
	No.2	235 yds.....	14°
	No.3	220 yds.....	16°
	No.4	205 yds.....	20°
	No.5	190 yds.....	24°
Irons	No.1	195 yds.....	16°
	No.2	185 yds.....	19°
	No.3	175 yds.....	23°
	No.4	165 yds.....	27°
	No.5	155 yds.....	31°
	No.6	145 yds.....	35°
	No.7	135 yds.....	39°
	No.8	125 yds.....	43°
	No.9	115 yds.....	47°
	Pitching Wedge.....	105 yds.....	52°
	Sand Wedge	95 yds.....	58°
	Putter	50 ft.....	n/a

The given distance refers to full-power shots taken under ideal conditions on a sunny, windless day from a perfect level tee with no spin.

EXEMPT STATUS: 1989 tournament winner
FULL NAME: Gregory John Norman
HEIGHT: 6' 1"
WEIGHT: 185lbs
BIRTH DATE: Feb 10 1955
BIRTH PLACE: Queensland, Australia
RESIDENCE: Lost Tree Village, Florida; Plays out of Grand Cypress, Florida

FAMILY: Wife, Laura;
 Morgan-Leigh (10/5/82); Gregory (9/9/85)
SPECIAL INTERESTS: fishing, hunting, snooker

TURNED PROFESSIONAL: 1976

JOINED TOUR: 1983

CAREER EARNINGS: \$3,086,794

PLAY OFF RECORD: 1-3

TOUR VICTORIES: 1984 – Kemper Open. Canadian Open;
 1986 – Panasonic-Las Vegas Invitational, Kemper Open; 1988 – MCI Heritage Classic;
 1989 – The International, Greater Milwaukee Open

MONEY & POSITION: 1983 – \$71,411 (74th); 1984 – \$310,230
 (9th); 1985 – \$165,458 (42nd); 1986 – \$853,298 (1st); 1987 – \$535,450 (7th);
 1988 – \$514,854 (17th); 1989 – \$835,095 (4th)

BEST 1989 FINISHES: 1 – The International; 1 – Greater Milwaukee Open; T2 – USF&G Classic; T3 – The Masters; 4 – MONY Tournament of Champions; 4 – NEC World Series of Golf; T4 – THE PLAYERS Championship; T5 – K-Mart Greater Greensboro Open.

1989 SUMMARY: Tournaments entered – 17; in money – 10;
 top ten finishes – 8; stroke average – 69.40

BEST 1989 NABISCO STATS: 1 – par breakers (.224); 2 – scoring (69.40);
 15 – driving distance (273.2); 17 – greens in regulation (.887)

1989 NABISCO INDIVIDUAL COMPETITION: 4 – \$47,000

1990 NABISCO TEAM CHARITY COMPETITION:
 Team Championship



OTHER ACHIEVEMENTS: Winner of 58 tournaments around the world, such as 1986 British Open; 1979 and 1983 Hong Kong Open; 1980 French Open; 1980 and 1987 Australian Open; 1980 Scandinavian Open; 1980, 1983 and 1985 Suntory World Match Play; 1981, , 1983, 1984, 1987 and 1989 Australian Masters; 1981 and 1982 Dunlop Masters; 1983 Kapala International; 1983 and 1985 Queensland Open; 1983 and 1986 New South Wales Open; 1983 Cannes Invitational; 1984 Victoria Open, Australia; 1989 Australian Tournament Players Championship; 1989 Chunichi Crowns, Japan; Leader, European Tour Order of Merit; 1986 Arnold Palmer Award recipient for leading money winner; Leo TOUR putting and par-breakers in 1986, and par-breakers in 1989.

NATIONAL TEAMS: Australian Nissan Cup (2), 1983 and 1986; Australian Kirin Cup, 1987; Australian Dunhill Cup (5) 1985, 1986, 1987, 1988, 1989; Australian Four Tours, 1989

Greg Norman may well be the most charismatic player in the game today; with his incredible skill he certainly does generate excitement. He has posted many victories worldwide and most of them have been impressive. Indeed, even when he doesn't win, Greg Norman makes the game exciting.

Last year he won two more on the PGA TOUR – The International and, two weeks later, the Greater Milwaukee Open. In all, he had eight top 10 finishes in just 17 starts. One that got away, however, was the British Open at Troon, but, true to his nature, he did make it exciting; he lost in a playoff to Mark Calcavecchia after shooting a brilliant round of 64 to gain the tie. He missed nearly two months of 1988 with an injured wrist. In the second round of the US Open, on the ninth hole, he strained it severely when hitting a ball off a tight lie and the club hit a boulder. He did win the MCI Heritage Classic that year but he also lost another pair of TOUR events in playoffs.

In 1986 he truly was incredible. He won twice on the TOUR, was second four times and 10 top 10 finishes in 19 US starts. Overseas, he won the British Open, European Open, Suntory World Match Play and then three in a row in his native Australia.

In all four of the more significant 1986 championships he was in the lead going into the final round. He led by one stroke going into the last day of the Masters Tournament, and finished tied for second. He led by one after three days at the US Open and finally tied for 12th place.

Credits

Game Design Gremlin Graphics Software Ltd.

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Atari ST, CBM, Amiga

CBM 64/128

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Pros at Batchwood & Baxenden Golf courses,
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