Bunkers are an integral part of the golf course and an additional hazard for the erratic golfer. On land which lacks natural features they create interest in the overall view of any particular hole. The construction or removal of bunkers is the most common concern of green committees while maintenance is seldom considered; as a result the appearance of bunkers often detracts from the general impression of a golf course and irregular maintenance is common.

Many golf courses have large numbers of bunkers and this gives rise to adverse comment from the ‘unfortunate’ golfer who lands in them and from already overworked greenkeeping staff when maintenance is required.

A maintenance programme should be designed to provide the golfer with a ‘fair’ lie within the bunker from which to play his next shot as well as to maintain a tidy appearance.

**Construction**

As with all other types of construction it is important to ensure that bunker foundations are in good condition.

The construction of bunkers commonly involves excavation to form a basin shape and in a heavy sub-soil this will become a water collecting hollow. It is, therefore, necessary to ensure that satisfactory drainage is provided and where required a tile drain should be laid in the base, falling to a suitable outlet. Backfilling with a suitable aggregate or clinker is necessary but the backfilling should be blinded with either ash or, as preferred by a number of greenkeepers, turf. Turves placed upside down to prevent the sand being washed through the backfilling into the drain.

**Sand**

The provision of the correct type of sand in a bunker is essential to ease future maintenance. On seaside golf courses sand is usually easily obtained but inland courses have more difficulty. It is convenient to obtain a sand from the cheapest and nearest source but bunker sand should be fairly hard, not too fine and certainly free from silt or grit. Fine sand containing silt will tend to pack down easily and form a poor surface from which to play a shot. In addition, this type of sand is more easily blown out by the wind. Soft sand will tend to break down and form a slurry when wet.

Sand with a high grit content should also be avoided particularly near greens where accidental damage to cutting implements may occur.

For inland golf courses it is important to avoid a sand which contains a proportion of shell or lime particularly in greenside bunkers. The regular blasting out of a ‘limey’ sand slowly creates alkaline conditions in the turf which will lead to lush grass growth and the establishment of worms or weeds. Clubs which are in doubt should have a sample of sand tested as it is frequently not possible to identify a sand which contains lime by visual examination.

Having decided on the type of sand the quantity is a further consideration. Sufficient sand should be provided to ‘fill’ the bunker thus enabling the golfer to play his desired shot out and a minimum depth of 4in. overall is required. The sand is regularly being blasted out of bunkers by golfers and a quantity is blown out by wind particularly in exposed situations, e.g. seaside courses and regular replacement is necessary.

**Raking**

Ideally, raking of bunkers should be carried out as part of a daily routine to maintain the sand in a loose condition and provide a smooth surface from which the golfer can play. This work is not sufficient on its own, however, and requires the co-operation of the golfer who should be reminded constantly of his responsibility to leave the bunker in the condition which he would wish.
to find it. Special attention should be paid to this point where it is not possible to carry out daily raking.

Regular raking will also curb the establishment of weeds or weed grasses.

**Weed control**

Generally weed control is best carried out by mechanical means, i.e. regular raking and trimming of the edges but where weeds or weed grasses are a particular problem total weedkillers sometimes can be used. Bunkers around greens are best omitted from this treatment but if necessary the rapidly de-activated types of herbicide could be used, e.g. Paraquat/Diquat, and extreme care should be taken to avoid damage to surrounding turf.

**Mowing**

In addition to keeping the sand smooth and loose the edges of the bunkers should be regularly trimmed. The entrance, lip and banks all form part of the hazard and if they are to serve their purpose fully this trimming should be carried out at about fortnightly intervals.

**Grass Bunkers**

This type of bunker is found on a number of courses serving the same purpose as a sand bunker, i.e. to penalise a wayward shot. Maintenance of banks and surrounds should follow the same pattern as for the bunkers. The sward in the bunker base should be maintained at a manageable height, i.e. semi-rough height of say 2in. so that a ball entering the bunker is not favoured with a fairway lie.

Weed control in grass bunkers should be carried out as necessary using an appropriate selective weedkiller.

From the cost and maintenance point of view the number of bunkers on a golf course should be kept to a minimum as it is their maintenance which usually suffers in a busy season. Natural features used as hazards with judicious placing of bunkers can do much to provide interest in the game of golf without increasing unduly the labour requirement for maintenance.

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