

# Analysis of Playing Lengths of Golf Courses on the PGA TOUR

## 1. Summary

The PGA TOUR is considered to have started in 1929. Since that year, the playing lengths of golf courses on the PGA TOUR have lengthened from an average of 6500 yards to 7300 yards in 2018, an increase of 800 yards or 12 percent, and at an average rate of increase of 9 yards per year over this period of time.

The PGA TOUR has measured drive distances in a consistent manner since 1980. Average drive distances have increased since 1980 and there is a strong correlation between average drive distances and average playing lengths of golf courses on the PGA TOUR over the period from 1980 to 2018. Finally, it is shown that ten courses that formerly held PGA TOUR events, but are no longer used, were significantly shorter than the average PGA TOUR course.

## Contents

Analysis of Playing Lengths of Golf Courses on the PGA TOUR .....	1
1. Summary .....	1
2. History of Playing Lengths.....	1
3.1 Length of Current and Past Tournament Courses .....	4
4. References .....	5
Appendix A – List of Figures .....	6
Appendix B – List of Tables .....	6

## 2. History of Playing Lengths

Reliable records of the playing lengths of the golf courses used by PGA TOUR events from before 1900 to the present are available through PGA TOUR: Official 2017-2018 Media Guide. Figure 1 shows the playing lengths of courses played for individual PGA TOUR events (current event name). It can be seen in Figure 1 that some events have playing lengths that vary within the same year, reflecting the fact that these events (such as the AT&T Pebble Beach Pro-Am and Career Builder Challenge for examples) are played over multiple courses within the same year.

The PGA TOUR is generally considered to have started in 1929. Figure 2 shows the annual average playing lengths since 1929. It can be seen in both Figures 1 and 2, but more clearly in the latter, that playing lengths have increased significantly over time. Since 1929, the average playing length of PGA TOUR courses has increased from 6500 yards to 7300 yards, an increase of 800 yards or 12 percent, and at an average rate of 9 yards per year.

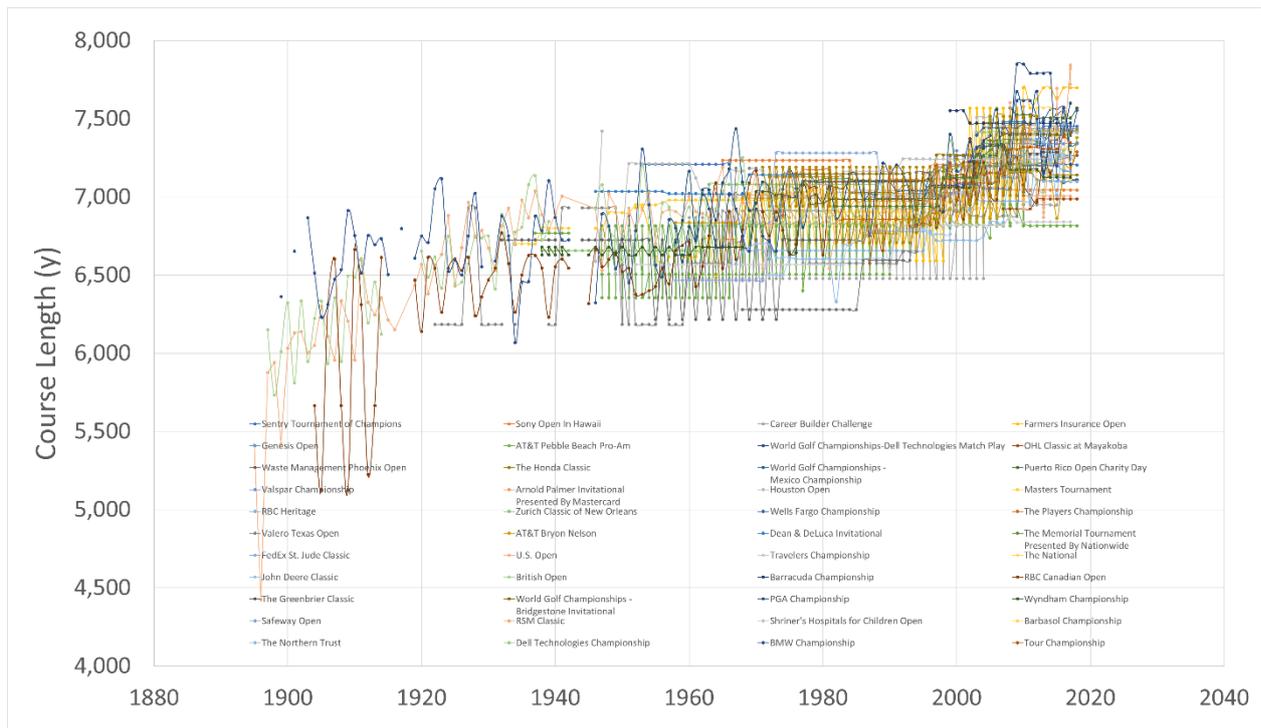


Figure 1 Playing lengths by PGA TOUR event (some events are played over multiple courses in a given year)

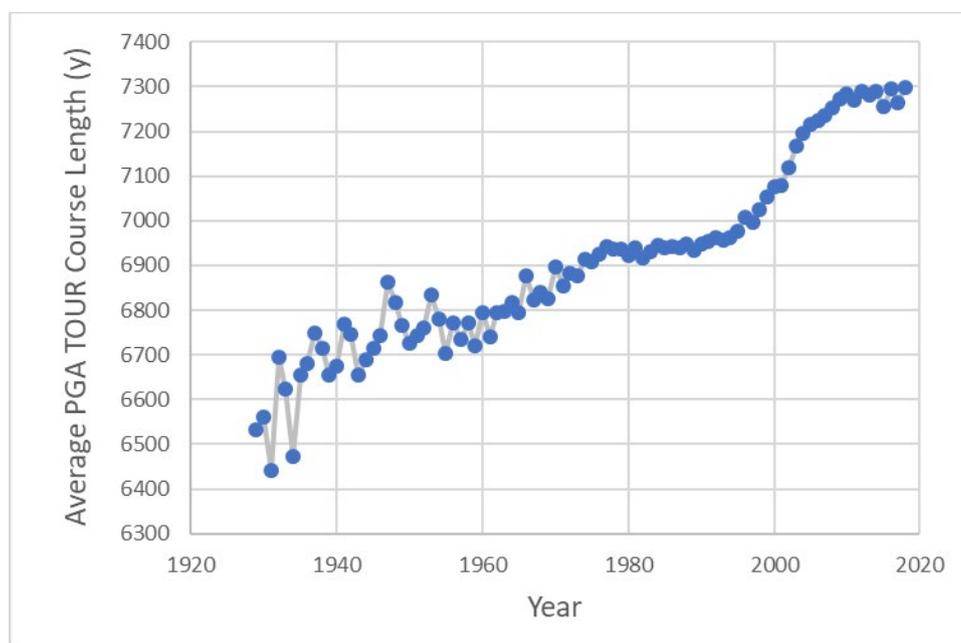


Figure 2 Annual average playing lengths on the PGA TOUR (1929-2018)<sup>3</sup>. Relationship between Playing Lengths and Drive Distances

The average drive distances on measured holes on the PGA TOUR since 1980 is available through the PGA TOUR's website. The measured drive distance statistic is collected for each player's drives on two holes at each tournament site. Typically, these holes are selected where a driver is most likely to be used for the tee shot, that run in opposite direction to help mitigate the effect of wind and are

reasonably flat. Since the adoption of Shotlink in 2003, this statistic continues to use two holes in order to maintain a historically consistent metric. The average annual drive distance statistic includes only golfers who meet a minimum number of drives for the season (typically between 175 and 195 players). In addition to the official statistics published on the PGA TOUR website, there have been additional measurements of driving distances for PGA TOUR players over the years. Table 1 below lists the sources and applicable years of these additional drive measurements.

Table 1 Additional Sources of PGA TOUR drive distance measurements (see References section)

Years	Source
1968-1969	PGA TOUR (IBM Sports Information Service)
1963-1967	U.S. Open (USGA Golf Journal)
1964	Dunlop Masters (Search for the Perfect Swing)
1940,1949,1953,1956	U.S. Open (USGA Journal)

The annual average drive distances on the PGA TOUR are shown in Figure 3. The official PGA TOUR driving distance stats (1980 – 2018) are shown in blue with other sources prior to 1980 shown in gray.

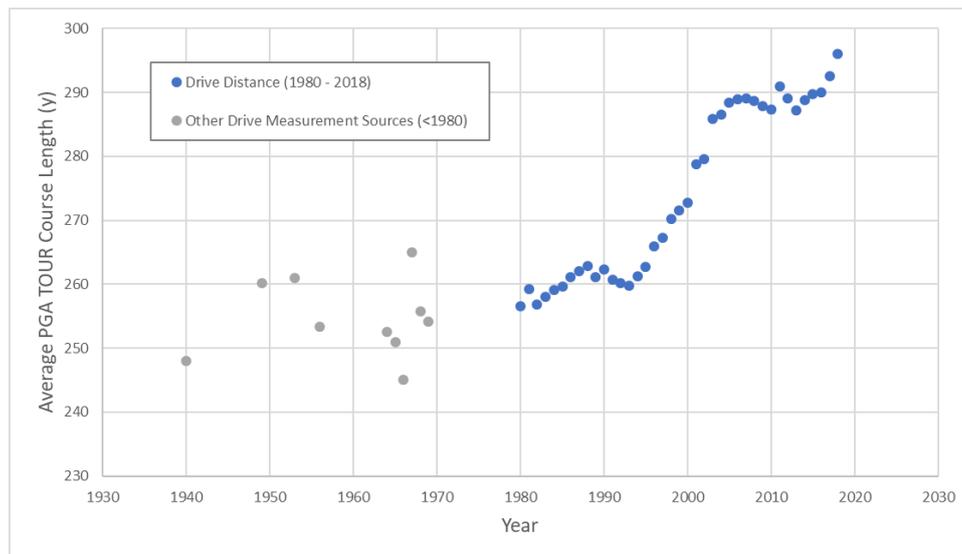


Figure 3 Annual average drive distance (measured holes) on the PGA TOUR (1980 – 2018 in blue) with other sources of drive distance measurements (prior to 1980 in gray)

It can be seen in Figures 2 and 3 that there is a similar shape between playing lengths and drive distances. Superimposing the two data sets reinforces this conclusion, as can be seen in Figure 4.

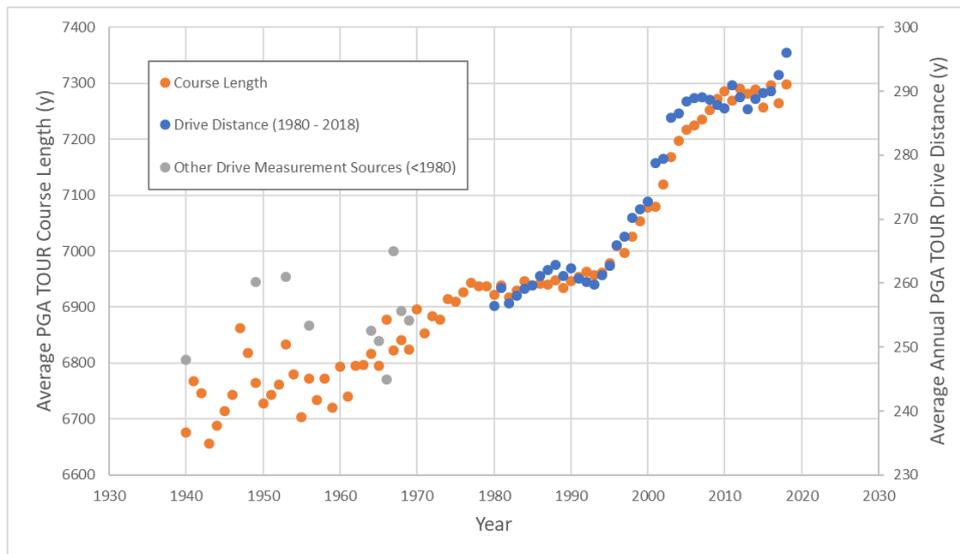


Figure 4 Relationship between annual average drive distances and annual average playing lengths

Figure 5 shows the statistical correlation between the official measured drive distances and playing lengths. The other sources of drive distance measurements are included for reference. It can be seen in Figure 5 that there is a very strong correlation between average drive distances and average playing lengths ( $r^2=97\%$ ).

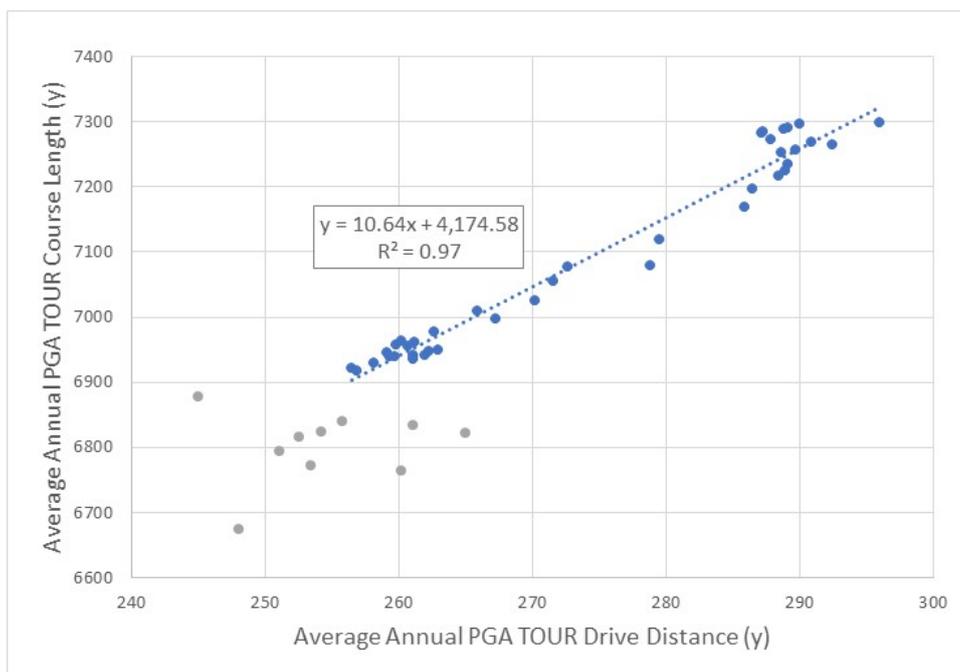


Figure 5 Correlation between annual average drive distances and annual average playing lengths. Annual average drive distances (measured holes) on the PGA TOUR (1980 – 2018 in blue) with other sources of drive distance measurements (prior to 1980 in grey). Only official drive measurements used in the correlation.

## 2.1 Length of Current and Past Tournament Courses

Given the strong relationship between drive distances and average playing lengths, the lengths of courses that formerly hosted PGA TOUR events were compared with the average lengths of courses that continue to hold PGA TOUR events. There are approximately 80 courses that have hosted at least ten PGA TOUR events (including major championships). Colonial Country Club has held the most (90). Of these courses, 24 held an event in 2018. The average length of those 24 courses in

2018 was 7301 yards compared with the overall average length of 7298 yards for all courses played in 2018. Next, the other 53 courses were compared to the average length for all courses in the last year they were played. It was found that the courses that were discontinued averaged 150 yards shorter than the average for all courses in the final year that course was played.

It can be seen in Figure 6 that the difference between current and non-current courses is significant with 94% confidence.

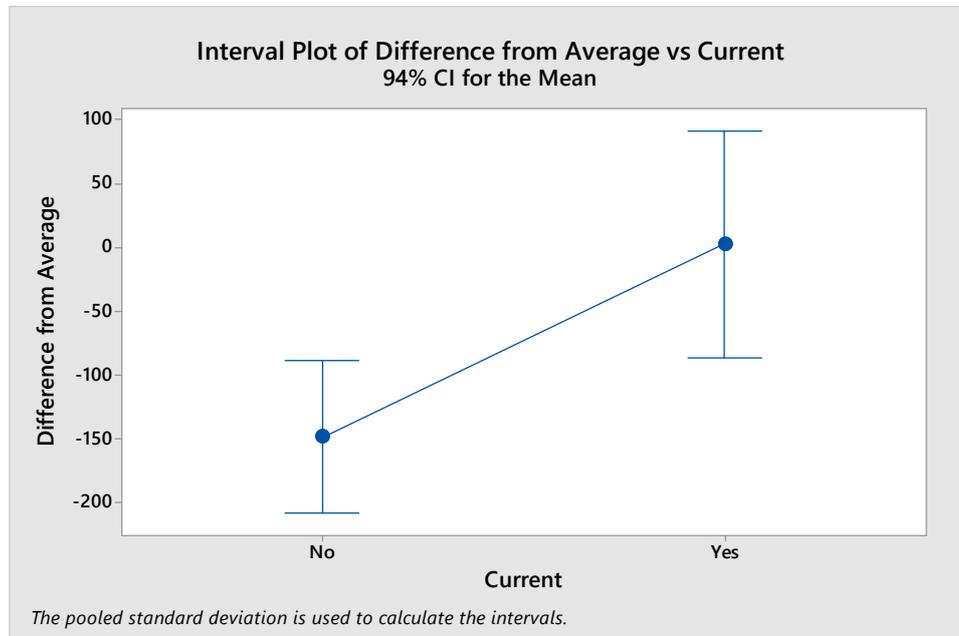


Figure 6 Difference in the length of current and non-current PGA TOUR courses compared with the average length of all courses in the final year a course was played (for courses that have hosted at least 10 events)

It may be concluded that courses significantly shorter than the current average are more likely to be replaced. In 2018, the shortest courses that have hosted at least ten events are TPC River Highlands (6841), El Camaleon GC at Mayakoba (6987), Waialae CC (7044), and Harbour Town Golf Links (7099).

### 3. References

#### PGA TOUR Official Media Guide 2017-2018

**Press Release**, International Business Machines (IBM), Sunday December 7, 1969 (Summary: 1969 Golfer Statistics by IBM Sports Information Service).

**Search for the Perfect Swing (Updated Version)**, Alistair Cochrane & John Stobbs, Triumph Books, 2005, p. 183

**How the Modern Ball Plays**, Robert Trent Jones, USGA Journal, August 1949, p. 15-17

**Driving Tests at Oakmont**, Robert Trent Jones, USGA Journal and Turf Management, November 1953, p. 5-7

**Driving Tests at the Open**, Robert Trent Jones, USGA Journal and Turf Management, August 1956, p. 8-10

**Putting and Driving in the Open**, Jack Reddy, USGA Golf Journal, September 1963, p. 5-7

**Putting and Driving in the Open**, Jack Reddy, USGA Golf Journal, November 1964, p. 12-15

**Drives in the Open: 251 Yards**, Jack Reddy, The Golf Journal, August 1965, p. 12-15

**The Long Game at the Open**, Jack Reddy, The Golf Journal, October 1966, p. 11-15

**The Long Game at the Open**, Jack Reddy, The Golf Journal, September 1967, p. 12-17

**Robert Trent Jones Memo on Driving Data at 1941 US Open**

## Appendix A – List of Figures

Figure 1 Playing lengths by PGA TOUR event (some events are played over multiple courses in a given year).....	2
Figure 2 Annual average playing lengths on the PGA TOUR (1929-2018) .....	2
Figure 3 Annual average drive distances (measured holes) on the PGA TOUR (1980 – 2018 in blue) with other sources of drive distance measurements (prior to 1980 in gray).....	3
Figure 4 Relationship between annual average drive distances and annual average playing lengths ..	4
Figure 5 Correlation between annual average drive distances and annual average playing lengths. Annual average drive distances (measured holes) on the PGA TOUR (1980 – 2018 in blue) with other sources of drive distance measurements (prior to 1980 in gray). Only official drive measurements used in the correlation.....	4
Figure 6 Difference in the length of current and non-current PGA TOUR courses compared with the average length of all courses in the final year a course was played (for courses that have hosted at least 10 events).....	5

## Appendix B – List of Tables

Table 1 Additional Sources of PGA TOUR drive distance measurements (see References section) .....	3
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