



Iron Distance Profiling:

A True Length Technology™

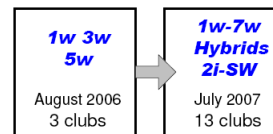


project with



OPTIMALFLIGHT: 2007

Five months of development enabled OptimalFlight to handle launch monitor data from Driver-5w to all clubs in the bag (*putter is optional*).



A special launch monitor project was done on a player's current iron set and a fitted set using Dan Connelly's True Length Technology™ system.

Results:

- OptimalFlight was used successfully to illustrate set-to-set differences.
- On course results validated OptimalFlight's carry estimates for irons.
- The TLT™ set produced improved control overall and created longer distance with the long irons.



OPTIMALFLIGHT + TLT: Background

Launch monitor studies are mostly done for Driver.

- *Very few studies focus on irons.*

True Length Technology™ fitting system has been generating positive press coverage in the past few years.

- *Little was known about TLT results from a Launch Monitor perspective.*



OPTIMALFLIGHT + TLT: The plan

Dan Connelly was contacted to see if he would be interested in doing a special project to document an exceptional ball striker progress from his Ping ISI iron set of 12 years to a custom fitted TLT set. The participants in this project are:

- **Colby Webber** (Clubfitter who did the fitting, contributed launch monitor time)
- **Dan Connelly** (True Length Technology™)
- **Todd Kos** (project leader, OptimalFlight analysis)
- A (+) Handicap golfer who shoots under par regularly and plays golf at least 2-3x per week.

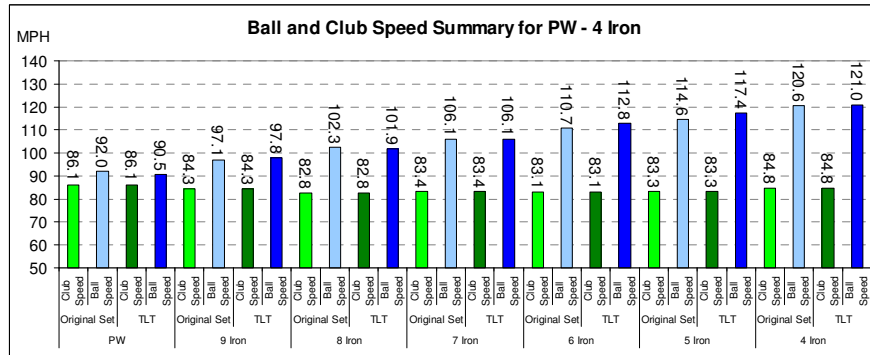
● ● ● **OPTIMALFLIGHT + TLT: Results**

October 2007: LM data was gathered on current iron set.
 November 2007: LM data was gathered on TLT fitted set.

- 4 good strikes were recorded with each club.
- *“The ball was placed in the same spot on the mat for each iron as we went through his set. I asked him after each shot, whether the contact was solid or not. If it was, I added the shot to our list.”*
- The most similar 3 or all 4 shots were selected and averaged.
- Each launch monitor session time took approximately 90 minutes to gather the data.

● ● ● **OPTIMALFLIGHT + TLT: Results**

Clubhead speed consistency performance summary:



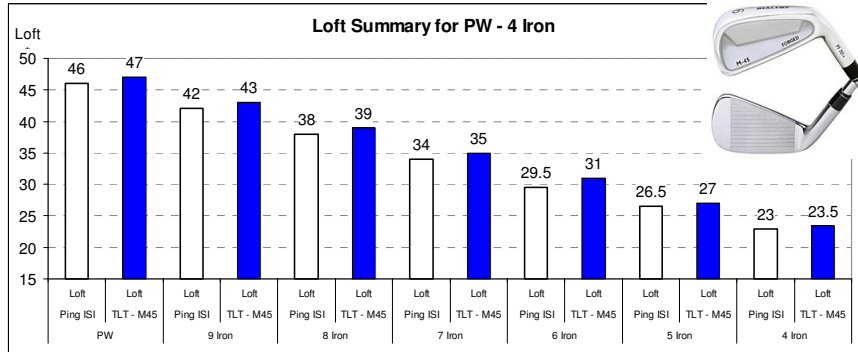
This player is an ideal candidate to provide an insight on how launch condition differences with his current set and a TLT fitted set.

● ● ● OPTIMALFLIGHT + TLT: Results

The golfer's current set was Ping ISI nickels (2670kg/cm2 MOI average) and decided on this iron and shaft combination for his TLT custom fitted set:

Maltby M45 with FST Pro White Lite's with ProSoft inserts.

- 2670kg/cm2 MOI target with a very tight "tolerance" of +/- 3kg/cm2.



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● ● ● OPTIMALFLIGHT + TLT: Demo

- A special OptimalFlight sample database of 28 reports was set up to document this project.
 - It helped summarize individual shot results and identified the most similar 3 of 4 or all 4 shots for club average.
 - It helped create Club Averages and Comparisons.
 - Iron distance profile for all clubs.
 - Side by side comparison

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● ● ● **OPTIMALFLIGHT** + **TLT**: Conclusions

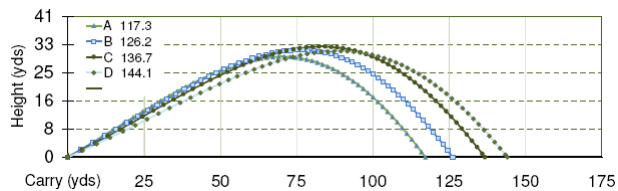
Summary Results of True Length Technology™ fitted set:

- 2-3 degrees higher launch conditions.
- Steeper and more consistent landing angle.
- Small but insignificant decrease in spin (300rpm)
- 5-10 yards longer distance off the long irons.

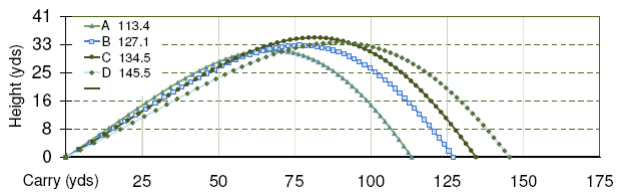
● ● ● **OPTIMALFLIGHT** + **TLT**: Feedback

Ball Flight comparison: Results: Comparable distances for short irons.

Ping ISI Set – PW-71:



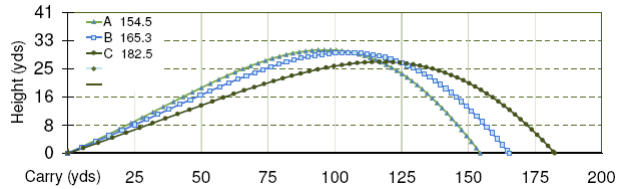
TLT Fitted Set – PW-71:



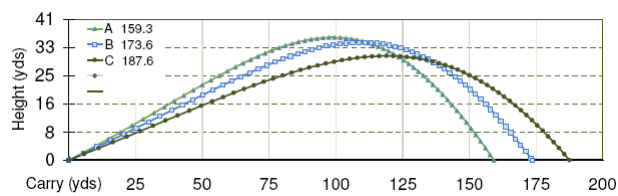
● ● ● **OPTIMALFLIGHT** + **TLT: Feedback**

Ball Flight comparison: Results: 5-10 yards longer for the long irons.*

Ping ISI Set – 6I-4I:



TLT Fitted Set – 6I-4I:



* On-course results, validating OptimalFlight estimates.

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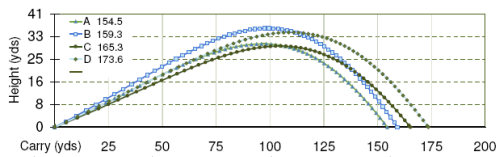
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● ● ● **OPTIMALFLIGHT** + **TLT: Feedback**

Long Iron comparison:

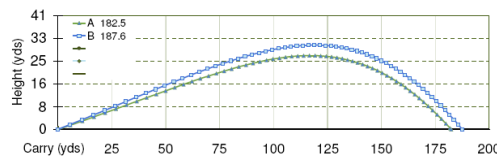
6I-5I:

Club / Shaft:	6I	6I TLT	5I	5I TLT
FLIGHT:	A	B	C	D



4I:

Club / Shaft:	4I	4I TLT		
FLIGHT:	A	B	C	D



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OPTIMALFLIGHT + TLT: Conclusions

Summary Results of True Length Technology™ fitted set:

- 2-3 degrees higher launch conditions.
- Steeper and more consistent landing angle.
- Small but insignificant decrease in spin (300rpm)
- 5-10 yards longer distance off the long irons.

The myth of a reduced length club (due to TLT fitting system) will cause a distance loss was dispelled.

The player successfully switched over to the True Length Technology™ fitted iron set.

- Likes the irons a lot !
- Follow-up feedback from OptimalFlight and on-course distance validation helped achieve a smooth adjustment with confidence to new clubs in 1-2 weeks instead of 4-8 weeks.



OPTIMALFLIGHT + TLT: Feedback

Golfer's feedback on his custom fitted TLT set:

What do you like most about the irons?

- It feels solid when I hit balls with it, and it feels like I have more control.

Was the longer distance in the long irons something you wanted to improve on your previous set?

- No, I wanted better control (to hit balls straighter).

Is there anything else that you noticed? Is it easier to hit? How's the shot making (making draws, fades, etc)?

- Yes, I can control the draws and fades better, and also I can hit balls straighter when I want to.



OPTIMALFLIGHT + **TLT**: Feedback

Golfer's feedback on his custom fitted TLT set:

What did the clubfitter do on this project that made you feel comfortable with this project?

- I am glad that he gave me the best match in iron and shaft. He took the time to test my swings using his launch machine.
- It was hard for me to find an iron set that I liked, and needed to test many, many different irons and he let me test as many as I wanted.
- He let me take demos out to the driving range so I could really test them out to see if the results matched the launch test.