Usability Study of the DP “Fit for Life” Weight Training Bench with Leg Station
By: John Godwin

Part I:

Note: This product is meant to allow the user to train the major muscle areas with one apparatus.

1. The first impression I had when looking at the apparatus was that the bench looked too short to comfortably fit anyone of average height. I was also concerned that because the end of the bench was so narrow there did not seem to be enough leg support to do leg extensions.

All but the shortest of users who lay straight back on the bench will hit their head on the bar.

The Leg Station was advertised as a means of training the majority of the leg muscles, however the DP station lacks a knee support bar to allow for proper knee support. (picture of an upgraded DP Bench)
Without the knee support bar the leg station is only adequate for leg curls (shown below) which works less than half of the major musculature of the legs.

On the other hand, a good feature of the bench was that the bench itself could be adjusted to different degrees of incline allowing for a greater variety of upper body exercises. Unfortunately, this one positive feature was not enough to yield a good user experience. The additive affect of repeatedly straining your neck to get into a bench press position and not being able to effectively train an import part of your legs leads to a disappointing user experience.

2. a. The DP weight training bench will allow for a moderate variety of upper exercises due to its ability to adjust inclination. The leg station will allow the user to easily perform leg curl exercises but leg extensions are difficult.

b. A typical user would expect to be able to perform all of the following exercises with this one piece of equipment. This is what the apparatus was marketed to be able to do.

![Bench Press](image1)

![Db Row](image2)

![Leg Curls](image3)
Leg Extensions

The inability to perform comfortable leg extensions and short length of the bench reduce the functionality of the system to less than what the typical user would desire.

3. Usability Goals in Order of Decreasing Importance:
The user should be able to perform the exercises **safely**.
The equipment should be **effective** in training the major muscle areas (typically chest, back, arms and legs).
The user should be able to **efficiently** move from one exercise to another.
The user should be able to **learn** and **remember** how to use the equipment **easily**.

User Experience Goals:
The user should have a **satisfying or rewarding** “full body”* style of workout.
* It is important to note that someone interested in this style of equipment is likely to desire a workout that encompasses weight training for the majority of his or her body. For this individual, if an area is left out of the workout it is very frustrating.

4. Usability Goal Assessment Questions:
*Question:* Does the design of the equipment guide the user away from making mistakes in setting up the apparatus for each exercise that would be commonly performed?
*Answer:* No. The most serious flaw in the design of the bench is the lack of a locking mechanism for the bar. The bar stands on this bench are very close together (see below).

If a user loads the bar unevenly by a small amount while changing the weights, they run the risk of flipping the bar off of the stands. This creates a hazard to the user and possibly a training partner. Although it could be said that this is a risk with many benches, the danger with this particular bench is magnified due to the absence of locks and narrow bar stand width.
To the left is an example of a bar stand with a bar lock.

Question: Does the design of the equipment allow the user to employ exercises that target the commonly accepted five major muscle groups?
Answer: No. The equipment design neglected to employ a stabilizing knee pad for leg extensions. The lack of this pad leaves out one of the 5 major muscle areas. You can effectively train the chest, back, arms and hamstrings (back of the legs), but you cannot train the quadriceps (front of the legs).

Question: Does the design of the equipment allow the user to move from one exercise to the next or one weight load to the next with minimal set up time?
Answer: No. The bench lacks bar locking mechanisms so the user must add one plate at a time on either side taking care to not slide the bar to far in either direction or risk flipping the bar off the bench.

Question: Does the design of the equipment allow the user to intuitively adjust it properly?
Answer: Yes and No. The Bench is easily adjusted to its different inclined positions. The user can see the predrilled holes for the adjustment rod and the adjustment rod itself has a handle that makes it easy to move it to the different height positions (see below).

Unfortunately, the experience of overloading one side of the bar is the only way to know how unstable the bar resting on the bench is.

User Experience Assessment Questions:

Question: Are the exercises that the equipment allows the user to perform generally considered “must have”* exercises for the five major muscle groups?
*There are groupings of exercises that engage greater amounts of muscle fibers than other exercises. These exercises are considered crucial to the success of fitness training programs.
**Answer:** Of the four areas that it is possible to train with this equipment (Chest, Back, Arms, Hamstrings) it is possible to employ some of the most common essential exercises. As previously mentioned, it is not possible to properly execute a leg extension. This would be frustrating for someone who was concerned with completing a full body workout.

Part II

1. **Usability Breakdown Scenario: Changing Weights During a Bench Press Routine**

   During one of the first exercise sessions I used this bench I decided to employ a common practice of increasing in weight after each set. After the first set I began to add what I believed to be a modest amount of weight on one side of the bar. The bar began to flip in my direction. Fortunately I caught the bar before it started to move fast and I was not injured. I expected that I would be able to load the bar unevenly by minor amounts and be safe. For comparison, an Olympic bench can be unevenly weighted to approximately 90 pounds without flipping. I was attempting a weight of around 25 pounds. I overestimated the stability of the bar which was influenced by how close together the bar rests are positioned.

2. There are three improvements that would improve the safety of the equipment. The first two address the need to increase the safety during changing weights on the bar. The bar rests should be located further apart giving a wider base of support. The rests should also employ locking mechanisms to hold the bar in place. An added benefit of addressing these safety issues would be that weight changes in between sets could become more efficient, thus improving user experience. The bench should also be lengthened to reduce the chance that the average user will hit his or her head on the bar when getting into position for a bench press. Finally, adding a stabilizing knee pad to the leg station would allow the user to implement leg extensions, addressing a major user experience problem.

**Resources:**

The picture of the upgraded knee support pad was a screen capture of a DP bench for sale on EBay.

The exercise pictures are from my training manuals that I produced while working as the Director of Strength and Conditioning at the College of Charleston from 1997-2002.

**Certification of Authenticity:**

I certify that this submission is entirely my own work, as per course collaboration policy.  
Signature: ______________________  Date: __________  

John Godwin  
CSIS 672 Tuesday-Thursday 5:30-6:45 P.M.