

**A 90% Rifle Range Qual Rate  
Would Save 594 Instructor-Days per Year**

Ref: (a) Parris Island Rifle Range Statistics FY05  
(b) Parris Island Rifle Range Statistics FY06

1. **A 90% male recruit 1st-time rifle range qual rate would save more than 594 instructor-days per year.**
2. **1458 instructor-days were lost** to range re-training each of the past two years. In FY05-FY06, 5158 unqs were re-trained at a loss of 11,659 recruit-training-days, or 5830 lost recruit-training-days each year.
  - a. RTR supported re-training with 1 DI for every 12 recruits. 5830 recruit-training-days is **486** lost instructor-days per year.
  - b. WFTBn supported re-training with 1 instructor for every 6 recruits. 5830 recruit-training-days is **972** lost instructor-days per year.
3. **83.34%** was the average male recruit 1st-time qual rate in FY05-FY06. An increase to 85% would save **163** instructor-days per year. An increase to 90% would save **594** instructor-days per year.
4. **Tables 1, 2, 3, and 4** contain the FY05-FY06 data and all calculations.
  - a. We lose instructor-days in proportion to qual rate decreases. A qual rate below 80% generates large losses in instructor-days.
  - b. The numbers are large. No other re-training event on Parris Island costs this much in lost instructor-days.
  - c. These values represent the *minimum* cost of re-shooting recruits. The actual costs are larger. These calculations do NOT include:
    - (1) Recycled recruits. Each recycle loses 21 recruit-training-days. Instructor-days are lost to drop processes and repeat training.
    - (2) Female recruits. The female average 1st time FY05-FY06 qual rate was 67.73%. This generated more lost instructor-days.
    - (3) Over-tasked WFTBn Marines. Ranges that are short of personnel lose a *greater* percentage of instructor-days re-training unqs.
5. **The qual rate is not improving.** The FY06 qual rate was 84.57%. The FY01-FY05 average qual rate was 84.51%. **After two solid weeks of high-quality marksmanship training, why do almost one in six of our recruits not qualify?** Unqs hurt 1st-time shooters. Instructors are drawn away to coach unqs, ranges are crowded, and time is limited.
6. **Recommendation. RTR and WFTBn need to work together to increase our 1st-time qual rates.** We need to save lost instructor days caused by excess re-training. RTR needs WFTBn instruction and range support. WFTBn needs RTR leaders who fully support marksmanship training.

- a. We need to answer the questions: "How do we get to 90%?", "Who currently shoots over 90%?", and "What factors are common to high shooting companies and how do we control these factors?"
- b. We need to track re-training numbers daily in order to control and minimize these lost instructor-days.

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Table 1. FY05-FY06 Male Recruit Training Days Lost on Rifle Range (Note 1)									
	Recruits on Range	1st Time Qual Rate	1st Time Qualified	Unqs: Mon Re-Shot - Qualified	Tue Re-Shot - Qualified	Wed Re-Shot - Qualified	Thu Re-Shot - Qualified	Did NOT Qualify: Recycled	Recruit Training Days LOST
				R1	R2	R3	R4		
<b>FY05</b> 82.11%	15453	<b>82.11%</b>	12688	<b>2765</b> -1291	1474 -644	830 -429	401 -214	187 X 5 = 935	<b>6405</b>
<b>FY06</b> 84.57%	15509	<b>84.57%</b>	13116	<b>2393</b> -1029	1364 -636	728 -424	304 -211	93 X 5 = 465	<b>5254</b>
<b>FY05-06 Total</b>	30962	<b>83.34%</b>	25804	<b>5158</b> -2320	2838 -1280	1558 -853	705 -425	280 X 5 = 1400	<b>11,659</b>
Average Re-Qual Rate				45% Re-Qual Rate	25% Re-Qual Rate	17% Re-Qual Rate	8% Re-Qual Rate	5% Recycle Rate	(Note 2) (Note 3)

## Notes:

- (1) All data is from Refs (a) and (b), *Parris Island Rifle Range Statistics FY05 (and FY06)*. R1 values are extracted directly. R2, R3, and R4 values, and re-qual percentages, are extrapolated using R4 data.
- (2) Recruit Training Days LOST is number of recruits who shot on R1 + R2 + R3 + R4 plus 5 days for each recruit recycled. Recycled recruits actually lose 21 training days, but only 5 of these are spent re-shooting on the range.
- (3) This calculation assumes one recycle range per day, R1 on Monday, R4 on Thursday. Sometimes, when the range is not crowded, this may be faster, with recruits shooting two recycle ranges in one day.

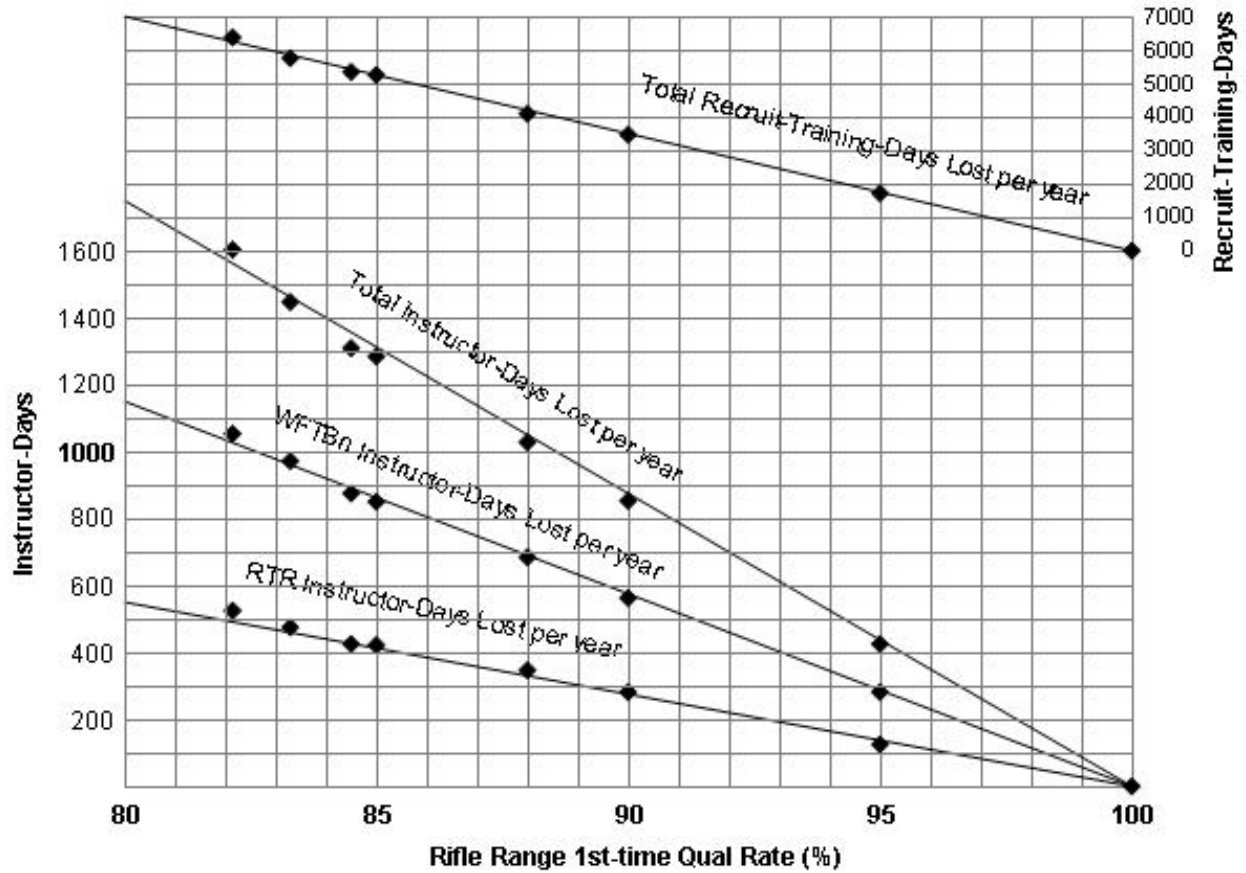
Table 2. Estimated Two-Year Male Recruit-Training-Days Lost on Rifle Range at Different Qualification Rates									
	Recruits on Range	1st Time Qual Rate	1st Time Qualified	Unqs: Mon Re-Shot - Qualified	Tue Re-Shot - Qualified	Wed Re-Shot - Qualified	Thu Re-Shot - Qualified	Did NOT Qualify: Recycled	Recruit Training Days LOST
				R1: 45%	R2: 25%	R3: 17%	R4: 8%	Fail: 5%	
<b>85%</b> Estimate	30962	<b>85%</b>	26318	<b>4644</b> -2090	2554 -1161	1393 -789	604 -372	232 X 5 = 1160	<b>10,355</b>
<b>88%</b> Estimate	30962	<b>88%</b>	27247	<b>3715</b> -1672	2043 -929	1114 -632	482 -297	185 X 5 = 925	<b>8279</b>
<b>90%</b> Estimate	30962	<b>90%</b>	27866	<b>3096</b> -1393	1703 -774	929 -526	403 -248	155 X 5 = 775	<b>6906</b>
<b>95%</b> Estimate	30962	<b>95%</b>	29414	<b>1548</b> -697	851 -387	464 -263	201 -124	77 X 5 = 385	<b>3449</b>
<b>100%</b>	30962	<b>100%</b>	30962	<b>0</b>	0	0	0	0	<b>0</b>

Table 3. FY05-FY06 Recruit-Training-Days Lost versus Instructor-Days Lost Calculations				
<b>RTR</b> two-year support for Unqs	<b>5158</b> Unqs divided by 84 ranges	= 61 avg Unqs per range	61 Unqs divided by 5 DIs (Note 1)	<b>= 12 : 1</b> avg Unqs per DI
<b>WFTBn</b> two-year support for Unqs	<b>30962</b> 1st-time shooters plus 5158 Unqs	= 36120 total shooters FY05-FY06	5158 Unqs divided by 36120 total shooters	<b>= .14</b> Unq effort as percent of WFTBn total effort
	<b>30962</b> 1st-time shooters divided by 84 ranges	= 369 avg 1st-time male shooters per range	369 + 61 Unqs	<b>= 430</b> avg shooters per range
	<b>78</b> WFTBn instructors for 430 shooters (Note 2)	X .14 Unq effort as percent of WFTBn total effort	<b>= 11</b> R1 Instructor-Days	<b>+ 6 + 3 + 1 = 21</b> R2 + R3 + R4 = Instructor-Days (Note 3)
	<b>61</b> Avg Unqs per range = R1 Recruit-Training Days	+ 34 + 19 + 9 = <b>123</b> R2 + R3 + R4 = Recruit-Training-Days (Note 3)	123 Recruit-Training-Days divided by 21 Instructor-Days	<b>= 6 : 1</b> avg Recruit-Training Days per WFTBn Instructor-Day (Note 4)

Notes:

- (1) An average of 5 DIs support re-training each week. This is an officer verifier, 2 DIs on the line and 2 DIs in the pits.
- (2) 78 WFTBn personnel is two ranges at 36 Marines each plus 6 PMIs. The ideal range averages 24 coaches, 4 block NCOs, 2 pit NCOs, 2 tower NCOs, a line SNCO, an ammo tech, and leaders. CWO F. Keeney, WFTBn, interview: 19 February 2007.
- (3) R2, R3, and R4 Instructor-Days and Recruit-Training-Days decrease each day by subtracting the average percentage of shooters who qualify each day.
- (4) R1 Recruit-Training-Days (61) divided by R1 Instructor-Days (11) also generates a 6:1 WFTBn ratio.

**Table 4. Lost Instructor-Days per Year at Different Qual Rates**



1st-time Qual Rate	Recruit-Training-Days Lost per Year	WFTBn Instructor-Days Lost per Year 6 : 1	RTR Instructor-Days Lost per Year 12 : 1	Total Instructor-Days Lost per Year
<b>82.11%</b> FY05 Avg	6405	1068	534	<b>1602</b>
<b>83.34%</b> FY05-FY06 Avg	5830	972	486	<b>1458</b>
<b>84.57%</b> FY06 Avg	5254	876	438	<b>1314</b>
<b>85%</b> Estimated	5178	863	432	<b>1295</b>
<b>88%</b> Estimated	4140	690	345	<b>1035</b>
<b>90%</b> Estimated	3453	576	288	<b>864</b>
<b>95%</b> Estimated	1725	288	144	<b>432</b>
<b>100%</b>	0	0	0	<b>0</b>

Note: All two-year data from Tables 1 and 2 is halved to generate one-year values.