



# Defense Acquisition Workforce Key Information

Engineering

As of FY18Q2 (31 March 2018)



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# Fact Sheet



## Human Capital Fact Sheet

Defense Acquisition Workforce Engineering	FY 2008				FY2018Q2			
	Engineering Civilian (Civ)	Engineering Military (Mil)	Total Engineering (Civ+Mil)	Defense Acquisition Workforce	Engineering Civilian (Civ)	Engineering Military (Mil)	Total Engineering (Civ+Mil)	Defense Acquisition Workforce
<b>Size &amp; Composition</b>								
Workforce Size	32,385	2,116	34,501	125,879	41,637	1,535	43,172	166,593
Change in size from 2008	-	-	-	-	29%	-27%	25%	32%
Civilian/Military Composition	94%	6%	-	88% / 12%	96%	4%	-	91% / 9%
<b>Educational Attainment</b>								
Bachelor's Degree or Higher	98%	95%	98%	77%	98%	97%	40%	84%
Graduate Degree	36%	45%	36%	29%	41%	62%	20%	40%
<b>Certification</b>								
Level I or Higher Achieved	78%	57%	77%	72%	90%	78%	89%	86%
Level II or Higher Achieved	70%	25%	68%	61%	75%	50%	74%	73%
Level III Achieved	58%	8%	55%	36%	54%	21%	53%	41%
Position Certification Requirement Met or Exceeded	67%	31%	64%	58%	84%	58%	83%	76%
Within 24 Months of Certification Requirement	18%	52%	20%	27%	14%	37%	15%	21%
Does Not Meet Certification Requirement	15%	17%	15%	14%	2%	4%	2%	3%
<b>Planning Considerations</b>								
Average Age	45	33	44	46	43	32	43	45
Workforce Life-Cycle Model (YRE)* % Future/Mid-Career/Senior	27/24/49(%)	-	-	20/23/57 (%)(Civ)	33/24/43(%)	-	-	24/26/50(%)
Average Years of Service	17	9	16	17	15	9	15	15
Retirement Eligible*	3,965(12%)	-	-	19,051(17%) (Civ)	8,061(19%)	-	-	29,699(20%)
Retirement Eligible w/in 5 Years*	4,804(15%)	-	-	21,315(19%) (Civ)	6,123(15%)	-	-	25,039(17%)
Total Gains/Losses*	4,050/4,197	-	-	14,245/15,030 (Civ)	3,818/3,207	-	-	15,324/12,050

Source: Data generated by OUSD(A&S)/Human Capital Initiatives using the A&S Workforce Data Mart & analysis support from RAND.



## Highlights FY18Q2



### Defense Acquisition Workforce Size Highlights

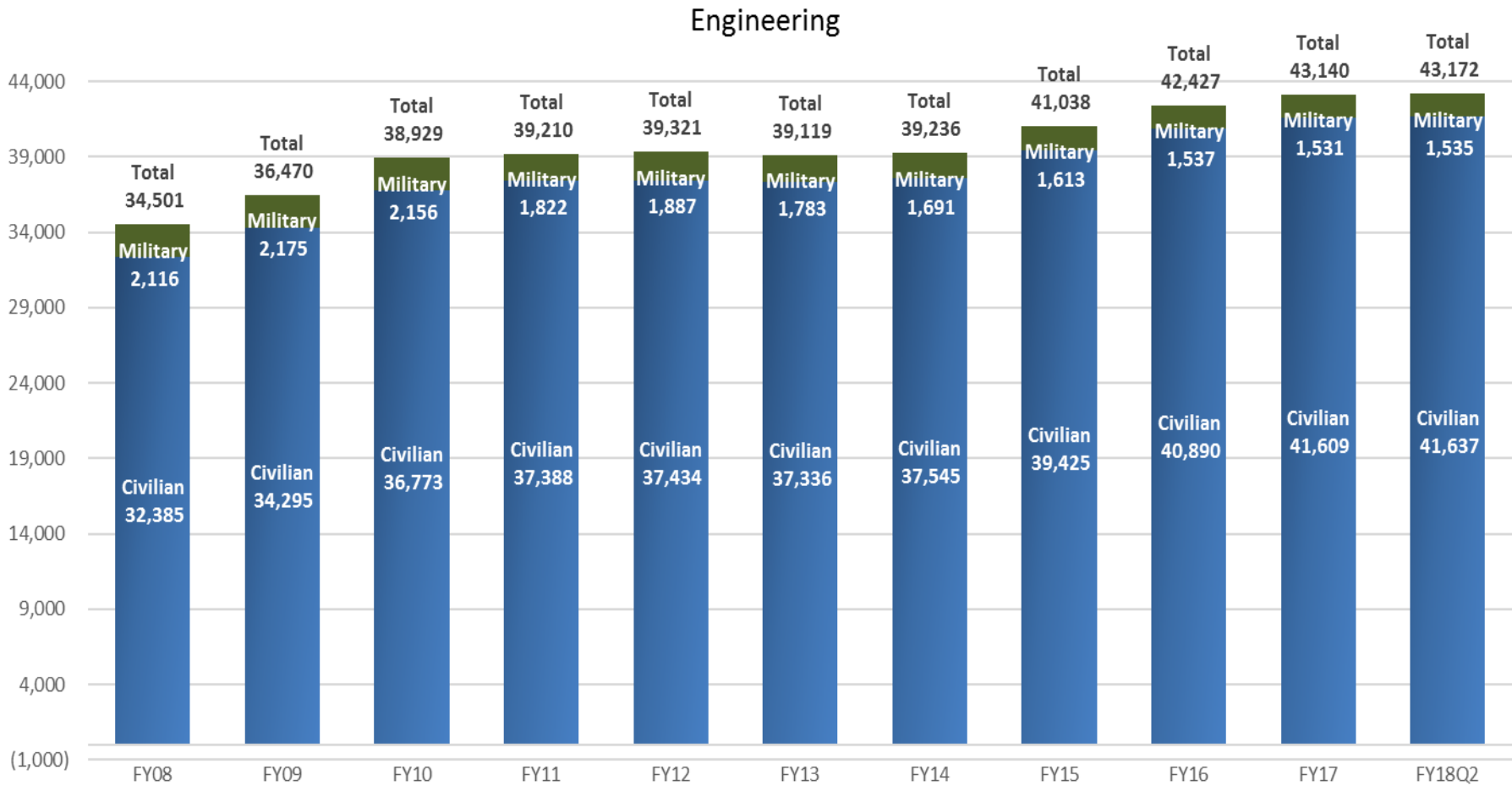
- The Engineering Defense Acquisition Workforce has seen a steady increase since FY14 growing from 39,242 to 43,172 at the end of this quarter.
- Although Engineering still has ones of the lowest attrition rates amongst the Career Fields at 6.5%, there has been a gradual increase (23%) since FY15.

### Defense Acquisition Workforce DAWIA Certification Highlights

- The Engineering Career Field DAWIA Meets/Exceeds certification rate is over 83%; the highest rate of the 14 career fields.

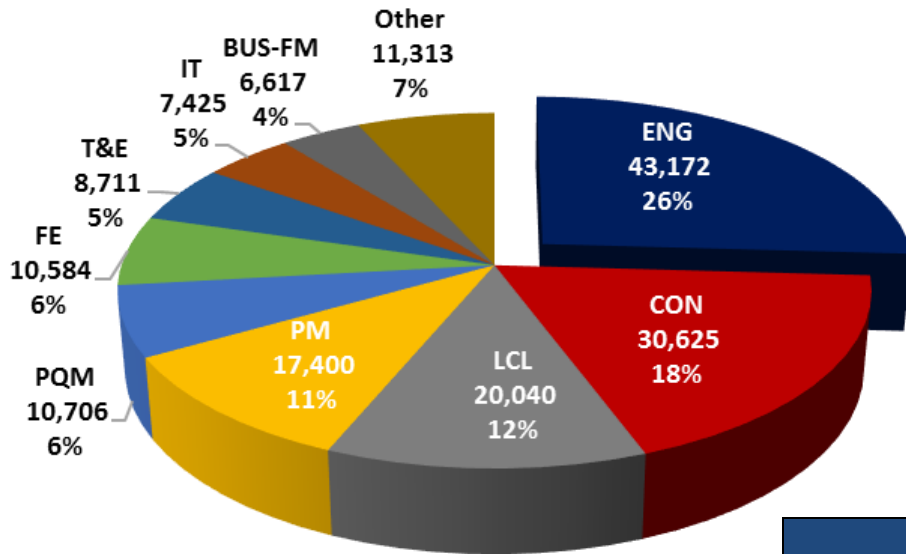


# Engineering Total Workforce





# AWF by Component and Career Field



FY18Q2 Totals	Army	Navy	Marine Corps	Air Force	4th Estate	Totals	% Total
Auditing	-	-	-	-	4,182	4,182	2.5%
Business - CE	259	523	36	512	87	1,417	0.9%
Business - FM	1,743	2,048	179	2,097	550	6,617	4.0%
Contracting	7,869	5,999	531	8,255	7,971	30,625	18.4%
Engineering	9,060	22,376	336	9,271	2,129	43,172	25.9%
Facilities Engineering	4,297	5,575	30	585	97	10,584	6.4%
Information Technology	1,735	3,043	219	1,369	1,059	7,425	4.5%
Life Cycle Logistics	6,952	5,974	626	3,347	3,141	20,040	12.0%
Production, Quality and Man	1,397	3,508	46	442	5,313	10,706	6.4%
Program Management	3,330	5,519	756	5,934	1,861	17,400	10.4%
Property	49	66	-	18	263	396	0.2%
Purchasing	365	372	48	59	515	1,359	0.8%
S&T Manager	475	514	4	2,830	119	3,942	2.4%
Test and Evaluation	1,861	3,203	130	3,150	367	8,711	5.2%
Unknown/Other	8	1	-	-	8	17	0.01%
<b>FY18Q2 Totals (as of 3-31-18)</b>	<b>39,400</b>	<b>58,721</b>	<b>2,941</b>	<b>37,869</b>	<b>27,662</b>	<b>166,593</b>	
<b>Component %</b>	<b>23.7%</b>	<b>35.2%</b>	<b>1.8%</b>	<b>22.7%</b>	<b>16.6%</b>		



# Engineering Workforce Historical Size by Agency FY08 – FY18Q2



Engineering Defense Acq Workforce Agency	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18Q2	% Change Since FY08	% Change Since FY17
Navy	16,353	17,810	18,932	18,924	19,121	19,183	19,423	20,816	21,623	22,297	22,376	37%	0%
MARINE CORPS	223	275	338	401	377	405	374	365	354	341	336	51%	-1%
ARMY	10,769	10,208	10,644	10,108	9,810	9,419	8,981	8,986	9,140	9,096	9,060	-16%	0%
AIR FORCE	6,429	7,197	7,625	8,514	8,649	8,521	8,473	8,903	9,139	9,276	9,271	44%	0%
DCMA	282	660	813	917	974	1,134	1,157	1,181	1,271	1,229	1,231	337%	0%
DLA	19	16	16	15	11	12	11	11	13	14	14	-26%	0%
MDA	281	363	623	615	644	631	605	582	601	603	594	111%	-1%
DISA	89	74	58	69	69	76	74	70	70	66	66	-26%	0%
DTRA	7	11	27	17	35	45	44	43	47	35	30	329%	-14%
DHA	2	8	9	9	10	8	6	2	4	8	9	350%	13%
DAU	33	41	46	48	49	45	40	38	45	43	47	42%	9%
NRO	-	-	-	-	-	-	-	-	66	78	72		-8%
OSD	31	19	25	24	21	29	23	24	22	22	22	-29%	0%
DeCA	-	-	-	-	-	-	-	-	3	3	4		33%
JCS	-	-	-	-	12	12	10	8	7	6	8		33%
DMEA	-	-	29	26	23	23	20	20	32	31	31		0%
TRMC	-	-	-	-	1	1	1	1	1	1	1		0%
DTIC	1	-	-	-	-	-	-	-	-	-	-	-100%	
DSCA	1	-	-	-	-	-	-	-	-	-	-	-100%	
IG	1	-	-	-	-	-	-	-	-	-	-	-100%	
ASD	-	4	4	3	1	-	-	-	-	-	-		
4th Estate Other	16	18	12	-	-	-	-	-	-	-	-	-100%	
<b>TOTAL</b>	<b>34,537</b>	<b>36,704</b>	<b>39,201</b>	<b>39,690</b>	<b>39,807</b>	<b>39,544</b>	<b>39,242</b>	<b>41,050</b>	<b>42,438</b>	<b>43,149</b>	<b>43,172</b>	<b>↑ 25%</b>	<b>↑ 0%</b>



# Engineering Workforce Historical Size (Quarterly) by Agency FY16Q1 – FY18Q2



Engineering Defense Acq Workforce Agency	FY16Q1	FY16Q2	FY16Q3	FY16Q4	FY17Q1	FY17Q2	FY17Q3	FY17Q4	FY18Q1	FY18Q2	% Change Since FY17Q2
Navy	20,811	20,887	21,196	21,623	21,652	21,668	21,777	22,297	22,276	22,376	3%
ARMY	9,079	9,063	9,061	9,140	9,145	9,122	9,008	9,096	9,084	9,060	-1%
AIR FORCE	8,795	8,949	8,686	9,139	9,126	9,221	9,211	9,276	9,178	9,271	1%
MARINE CORPS	363	356	353	354	355	353	357	341	339	336	-5%
DCMA	1,181	1,206	1,221	1,271	1,275	1,262	1,239	1,229	1,226	1,231	-2%
DLA	13	13	12	13	13	12	13	14	14	14	17%
MDA	577	583	588	601	600	597	605	603	597	594	-1%
DISA	67	67	64	70	73	73	72	66	68	66	-10%
DTRA	42	43	46	47	43	42	39	35	31	30	-29%
DHA	2	4	4	4	4	4	6	8	8	9	125%
DAU	37	42	46	45	44	44	46	43	46	47	7%
NRO	-	57	60	66	68	72	75	78	78	72	0%
OSD	23	23	22	22	22	22	23	22	22	22	0%
DeCA	-	-	1	3	3	2	1	3	4	4	100%
JCS	8	8	8	7	7	7	7	6	6	8	14%
DMEA	20	23	30	32	31	31	31	31	32	31	0%
TRMC	1	1	1	1	1	1	1	1	1	1	0%
<b>TOTAL</b>	<b>41,019</b>	<b>41,325</b>	<b>41,399</b>	<b>42,438</b>	<b>42,462</b>	<b>42,533</b>	<b>42,511</b>	<b>43,149</b>	<b>43,010</b>	<b>43,172</b>	<b>↑ 2%</b>

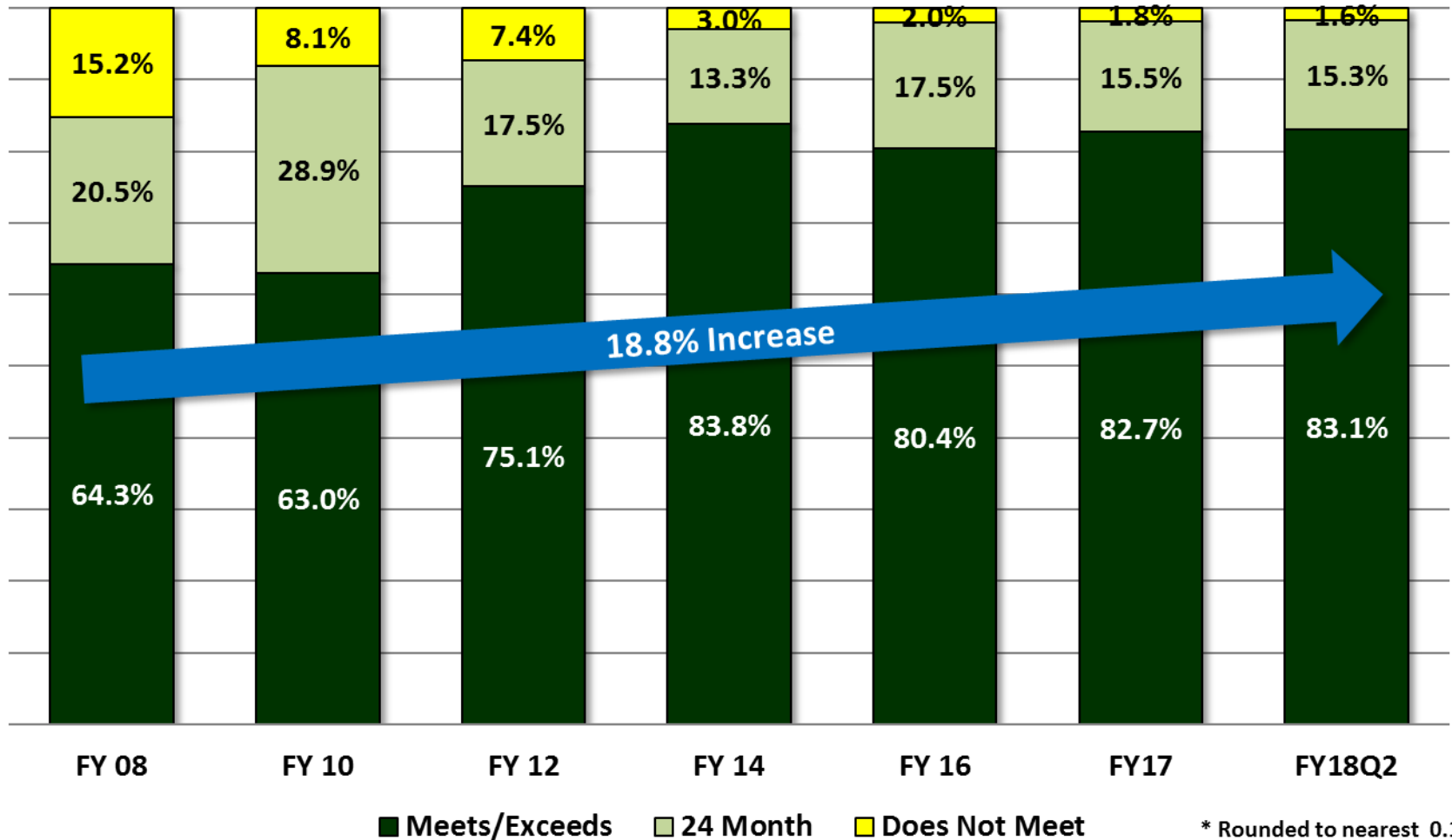




# Engineering Manager Historical DAWIA Certification FY08 – FY18Q2



## Engineering



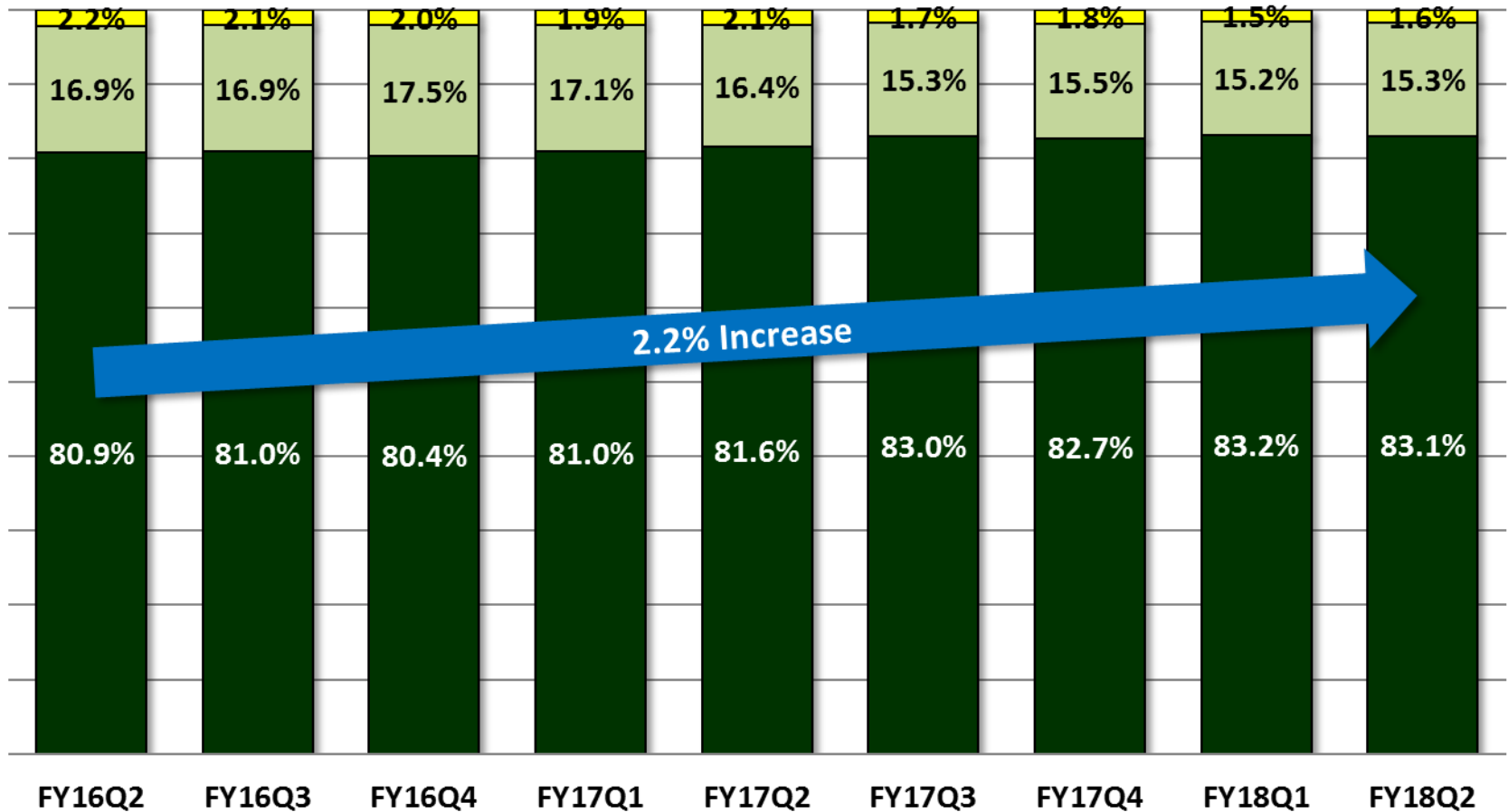
18.8% Increase



# Engineering Manager Historical (Quarterly) DAWIA Certification FY16Q2 – FY18Q2



## Engineering



■ Meets/Exceeds   ■ 24 Month   ■ Does Not Meet

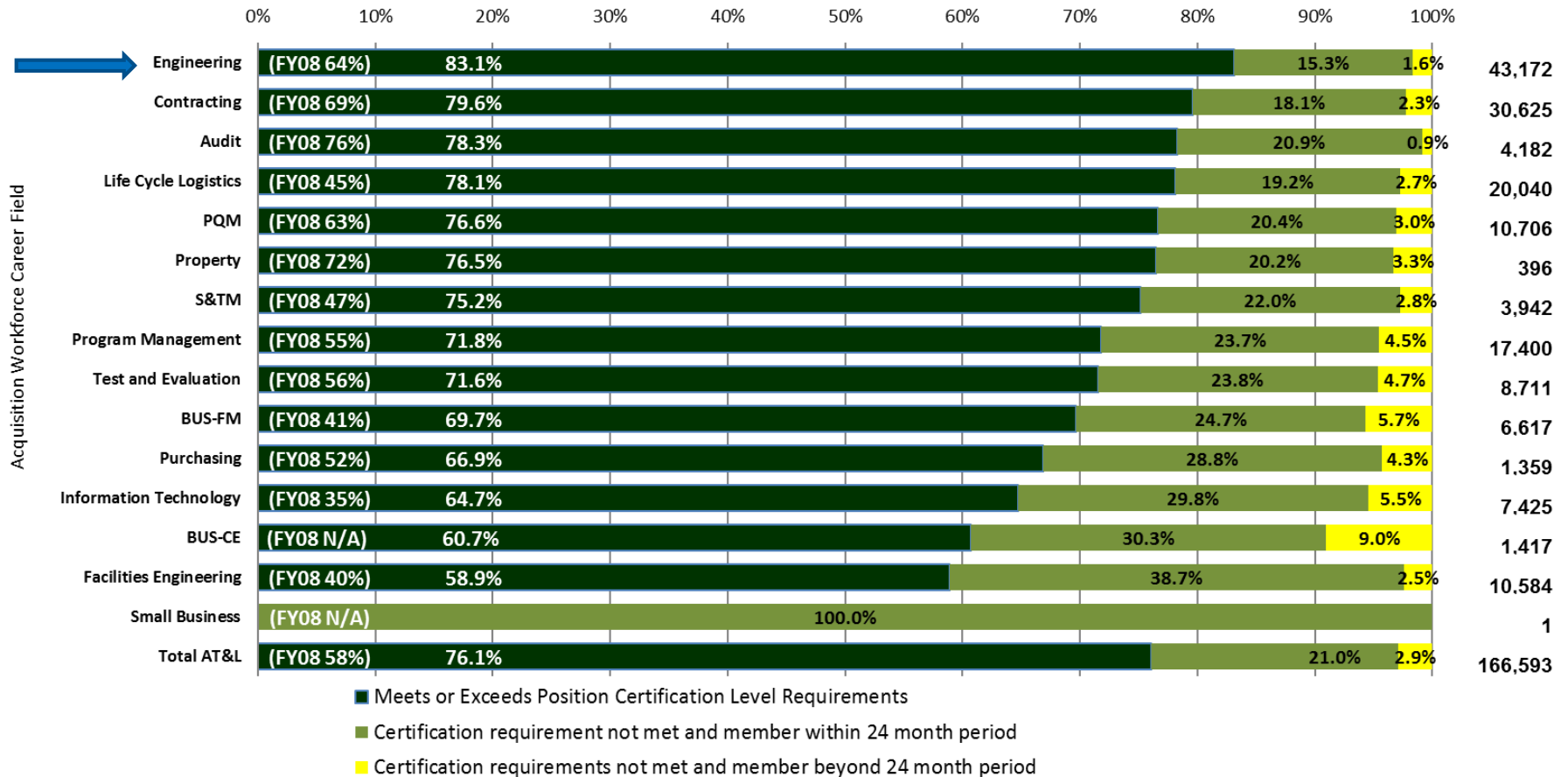
\* Rounded to nearest 0.1%



# DAWIA Certification by Career Field



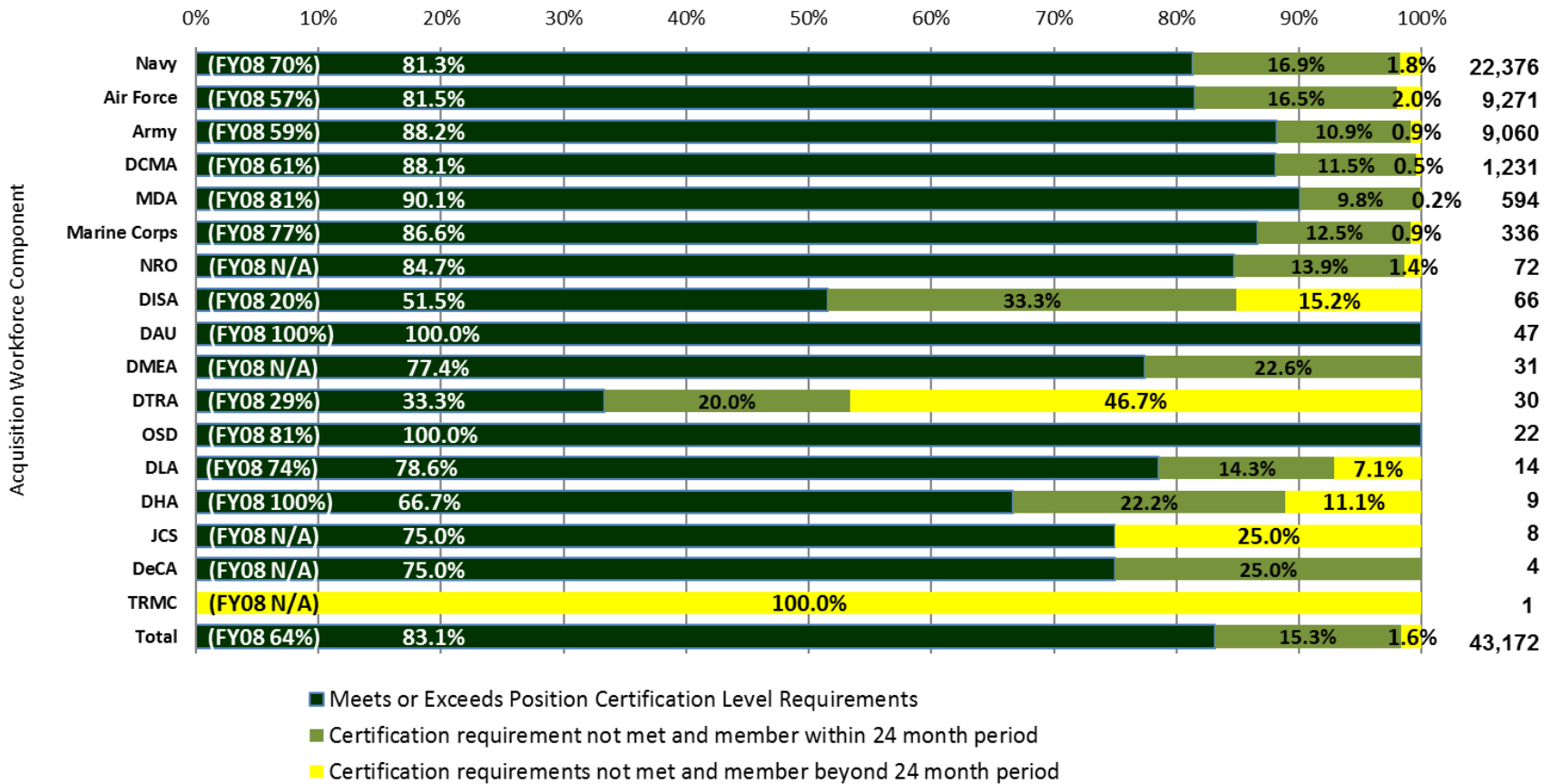
## Certification Level "Meet/Exceed" Rates by Career Field AT&L (FY18Q2)





# Engineering DAWIA Certification by Component

## Certification Level "Meet/Exceed" Rates by Component Engineering (FY18Q2)





# Engineering DAWIA Certification Matrix + Bench Strength

Engineering						
Achieved Certification Level						
Required Certification Level	No Level Achieved	Level I	Level II	Level III	FY18Q2 TOTAL	% Meets Certification Requirement
Level I	2,585	4,377	1,601	1,760	10,323	75.0%
Level II	1,498	1,879	7,004	7,383	17,764	81.0%
Level III	474	266	598	13,745	15,083	91.1%
Unspecified	-	-	1	1	2	
<b>FY18Q2 TOTAL</b>	<b>4,557</b>	<b>6,522</b>	<b>9,204</b>	<b>22,889</b>	<b>43,172</b>	<b>83.1%</b>
	10.6%	15.1%	21.3%	53.0%		

No Level Achieved includes those within the 24 month grace period

Bench Strength			
Org	# Meet or Exceeds	% Meets or Exceeds*	Career Field Rank
DAW	126,761	76.1%	
Army	31,111	79.0%	
Navy	44,599	76.0%	
Marine Cor	2,036	69.2%	
Air Force	27,058	71.5%	
4th Estate	21,957	77.6%	
Engineering	35,870	83.1%	1 of 14

\*\* Based on population total without unspecified positions

Certification Requirement	Meets	Within 24 Months	Does Not Meet	DAW TOTAL	
Level I	7,738	2,557	28	10,323	23.9%
Level II	14,387	2,924	453	17,764	41.1%
Level III	13,745	1,108	230	15,083	34.9%
Unspecified	1	1	-	2	0.0%
<b>Engineering TOTAL</b>	<b>35,871</b>	<b>6,590</b>	<b>711</b>	<b>43,172</b>	
	83.1%	15.3%	1.6%		

= Compliance

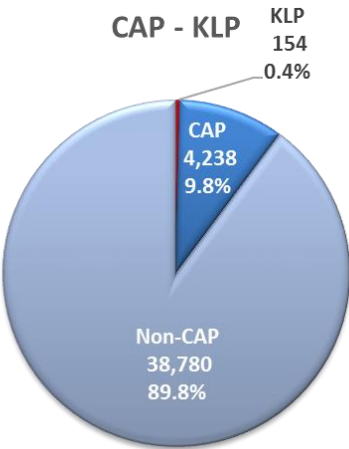
= Exceeds Requirements

\* NOTE: Rounded to nearest 0.1%

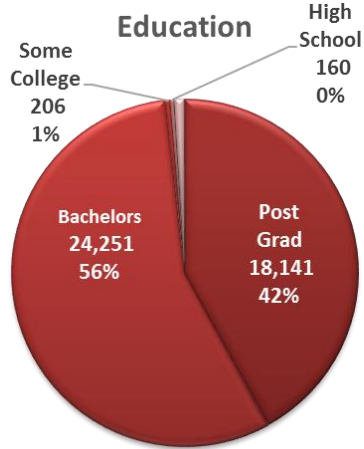


# Demographics

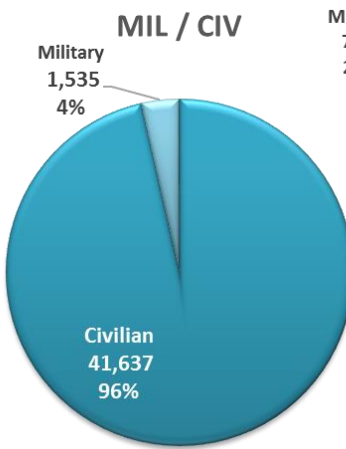
**CAP - KLP**



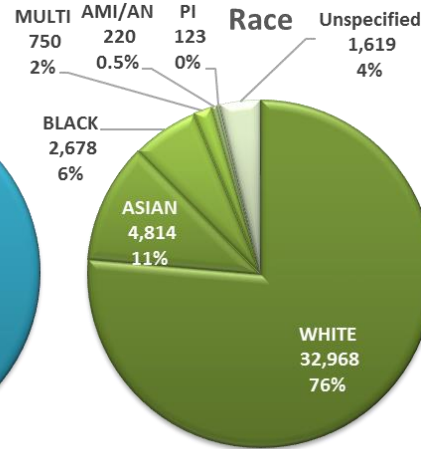
**Education**



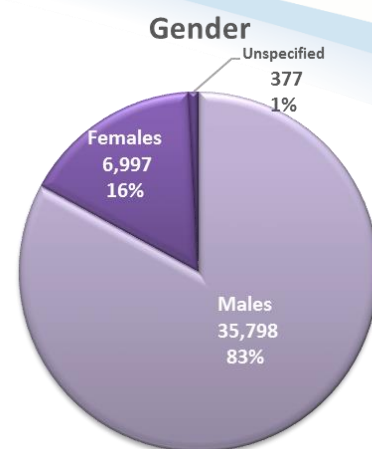
**MIL / CIV**



**Race**



**Gender**



Occupied Position Type	Engineering	Entire DAW
Key Leadership Positions (KLPs)	154 <i>0.4%</i>	1,076 <i>0.6%</i>
Critical Acquisition Positions (CAPs) *	4,238 <i>9.8%</i>	16,456 <i>9.9%</i>
Non-CAP Positions	38,780 <i>89.8%</i>	148,920 <i>89.4%</i>
Unknown	- <i>0.0%</i>	141 <i>0.1%</i>
<b>TOTAL</b>	<b>43,172</b>	<b>166,593</b>

\* = Number of CAPs, excluding KLPs (no double counts)

Highest Level of Education	Engineering	Entire DAW
Post Grad	18,141 <i>42.0%</i>	67,163 <i>40.3%</i>
Bachelors	24,251 <i>56.2%</i>	73,237 <i>44.0%</i>
Some College	206 <i>0.5%</i>	11,741 <i>7.0%</i>
High School	160 <i>0.4%</i>	12,374 <i>7.4%</i>
Other	414 <i>1.0%</i>	2,078 <i>1.2%</i>
<b>TOTAL</b>	<b>43,172</b>	<b>166,593</b>

Military / Civilian	Engineering	Entire DAW
Civilian	41,637 <i>96.4%</i>	151,056 <i>90.7%</i>
Military	1,535 <i>3.6%</i>	15,537 <i>9.3%</i>
<b>TOTAL</b>	<b>43,172</b>	<b>166,593</b>

Race	Engineering	Entire DAW
WHITE	32,968 <i>76.4%</i>	122,344 <i>73.4%</i>
ASIAN	4,814 <i>11.2%</i>	20,072 <i>12.0%</i>
BLACK	2,678 <i>6.2%</i>	11,222 <i>6.7%</i>
MULTI	750 <i>1.7%</i>	4,403 <i>2.6%</i>
AMI/AN	220 <i>0.5%</i>	971 <i>0.6%</i>
PI	123 <i>0.3%</i>	833 <i>0.5%</i>
Unspecified	1,619 <i>3.8%</i>	6,748 <i>4.1%</i>
<b>TOTAL</b>	<b>43,172</b>	<b>166,593</b>

Gender	Engineering	Entire DAW
Males	35,798 <i>82.9%</i>	117,018 <i>70.2%</i>
Females	6,997 <i>16.2%</i>	48,016 <i>28.8%</i>
Unspecified	377 <i>0.9%</i>	1,559 <i>0.9%</i>
<b>TOTAL</b>	<b>43,172</b>	<b>166,593</b>



# Engineering Size by Occupational Series

Civilian Occupational Series	Engineering	
0855 - Engineer, Electronics	10,506	25.2%
0801 - Engineer, General	8,446	20.3%
0830 - Engineer, Mechanical	6,533	15.7%
0861 - Engineer, Aerospace	2,909	6.99%
0854 - Engineer, Computers	2,660	6.39%
0850 - Engineer, Electrical	1,659	3.98%
1550 - Computer Scientist	4,014	9.64%
1515 - Operations Research Analyst	648	1.56%
1310 - Physicist	613	1.47%
0893 - Engineer, Chemical	485	1.16%
<i>Other</i>	<b>3,164</b>	<b>7.60%</b>
<b>TOTAL CIVILIAN</b>	<b>41,637</b>	<b>Civilians</b>

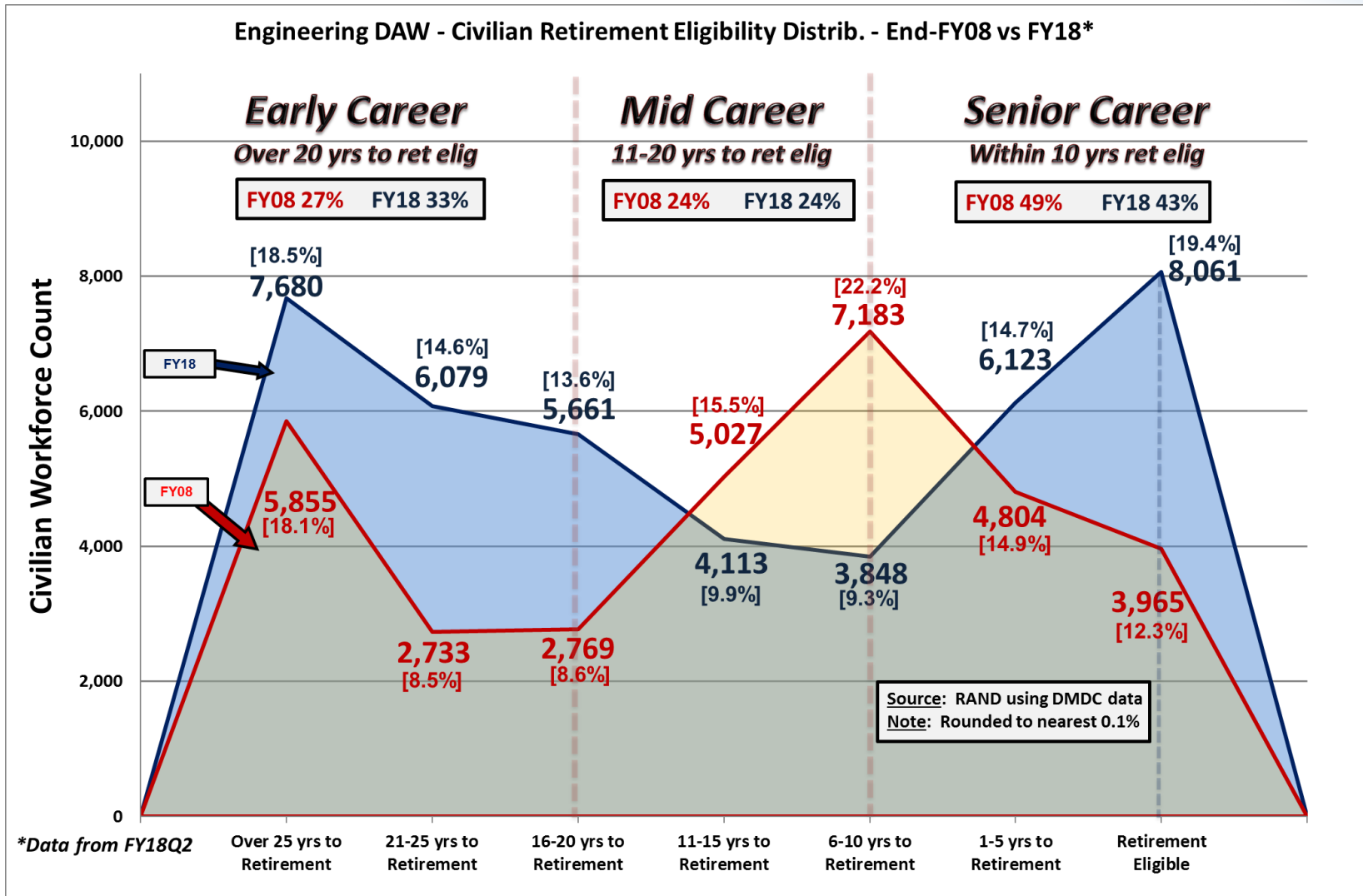


**RAND NDRI Forces and Resources  
Policy Center Data  
Retirement / Loss Slides  
FY18Q2**





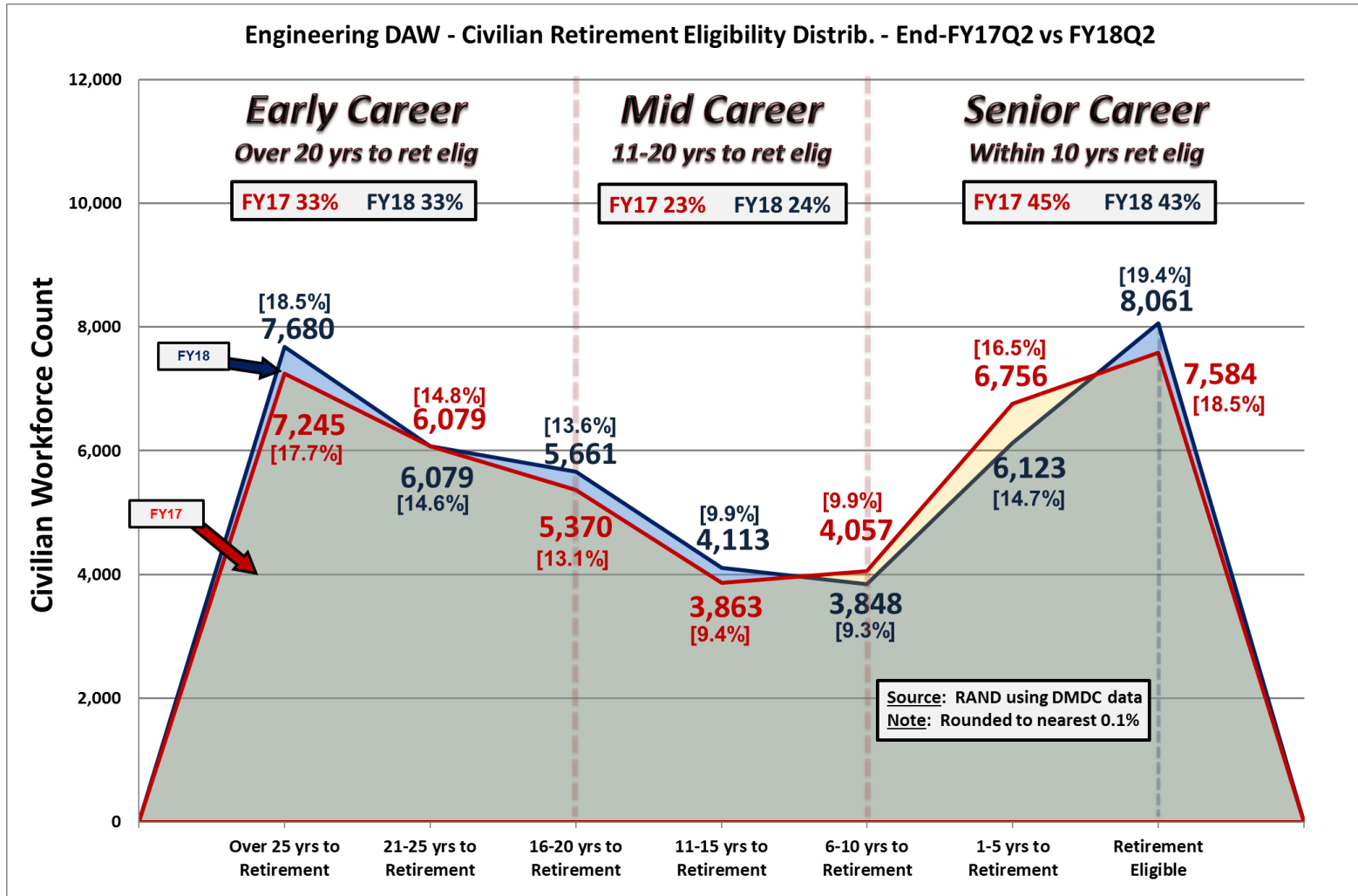
# Engineering Civilian Retirement Eligibility Distribution – FY08 / FY18Q2



As of 31 Mar 2018



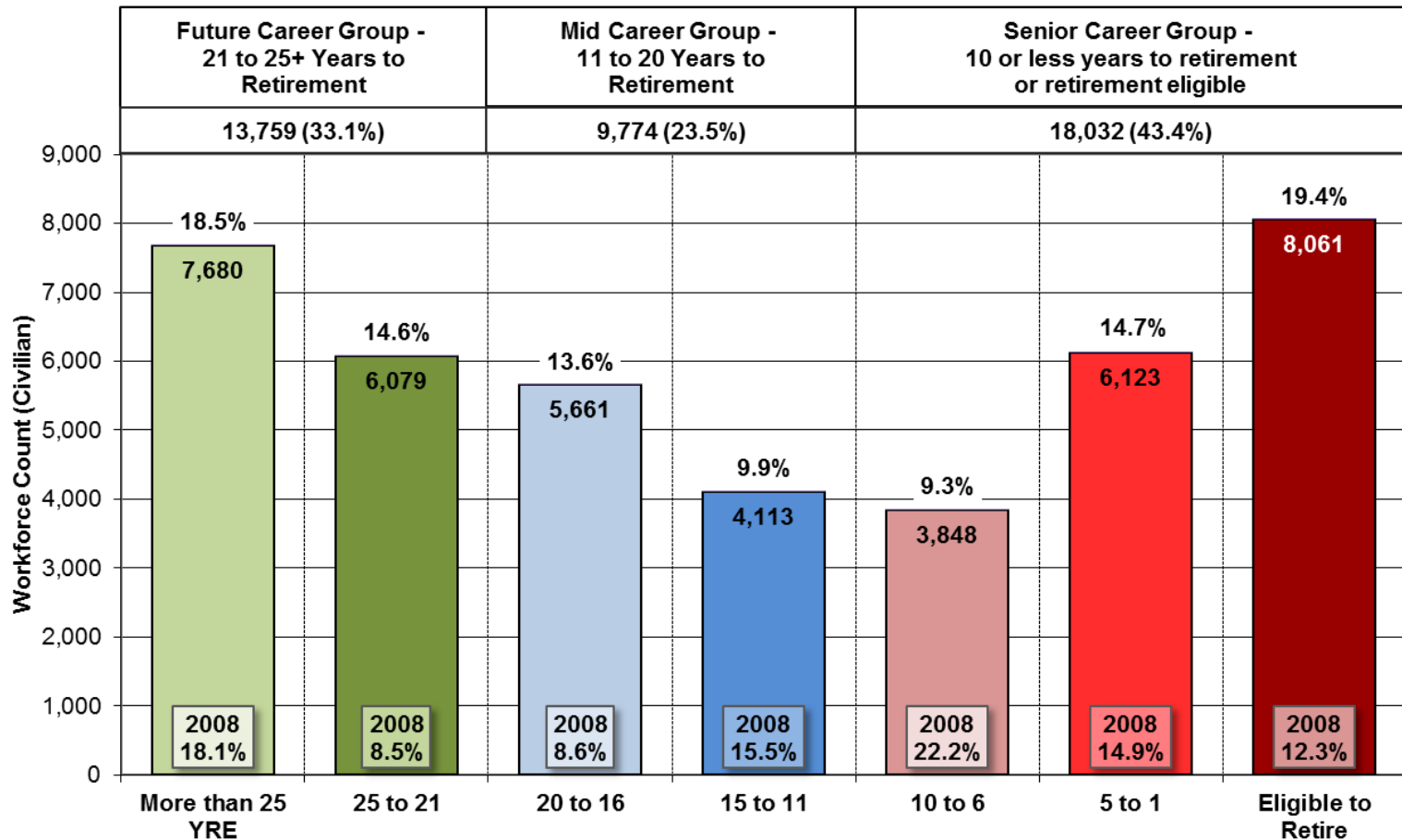
# Engineering Civilian Retirement Eligibility Distribution – (1 year) FY17Q2 / FY18Q2





# Engineering Workforce Lifecycle Model by YRE

**Defense Acquisition Workforce Lifecycle Model (WLM)**  
by Years to Retirement Eligibility (YRE) - Civilian (FY2018Q2) - Engineering



As of 31 Mar 2018

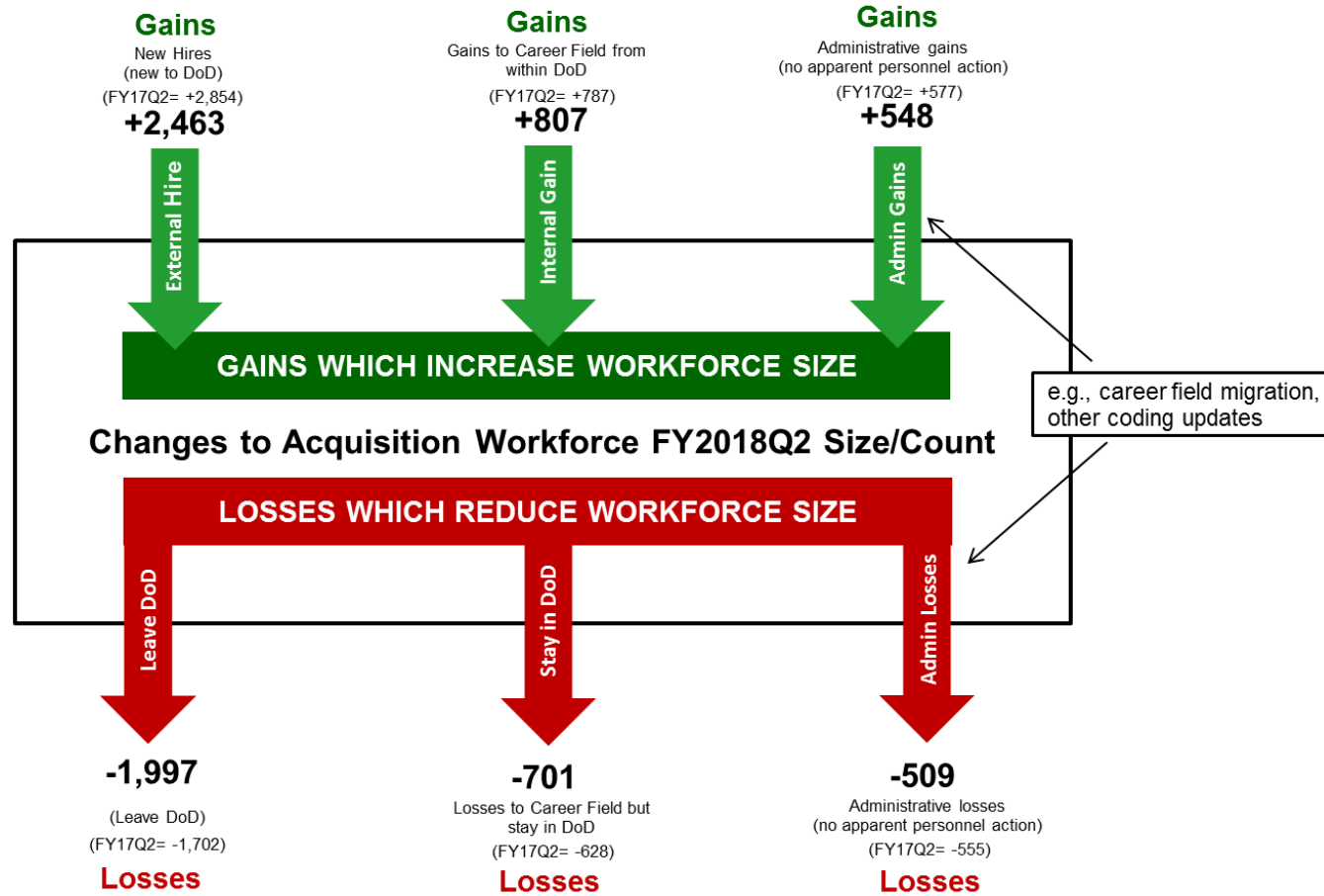


# Engineering Gains/Losses – New Hires Internal/External, Administrative



## Defense Acquisition Workforce (Civilian) (FY2018Q2) - Engineering

Gains and Losses by External to DoD, Internal to DoD, and Administrative Categories

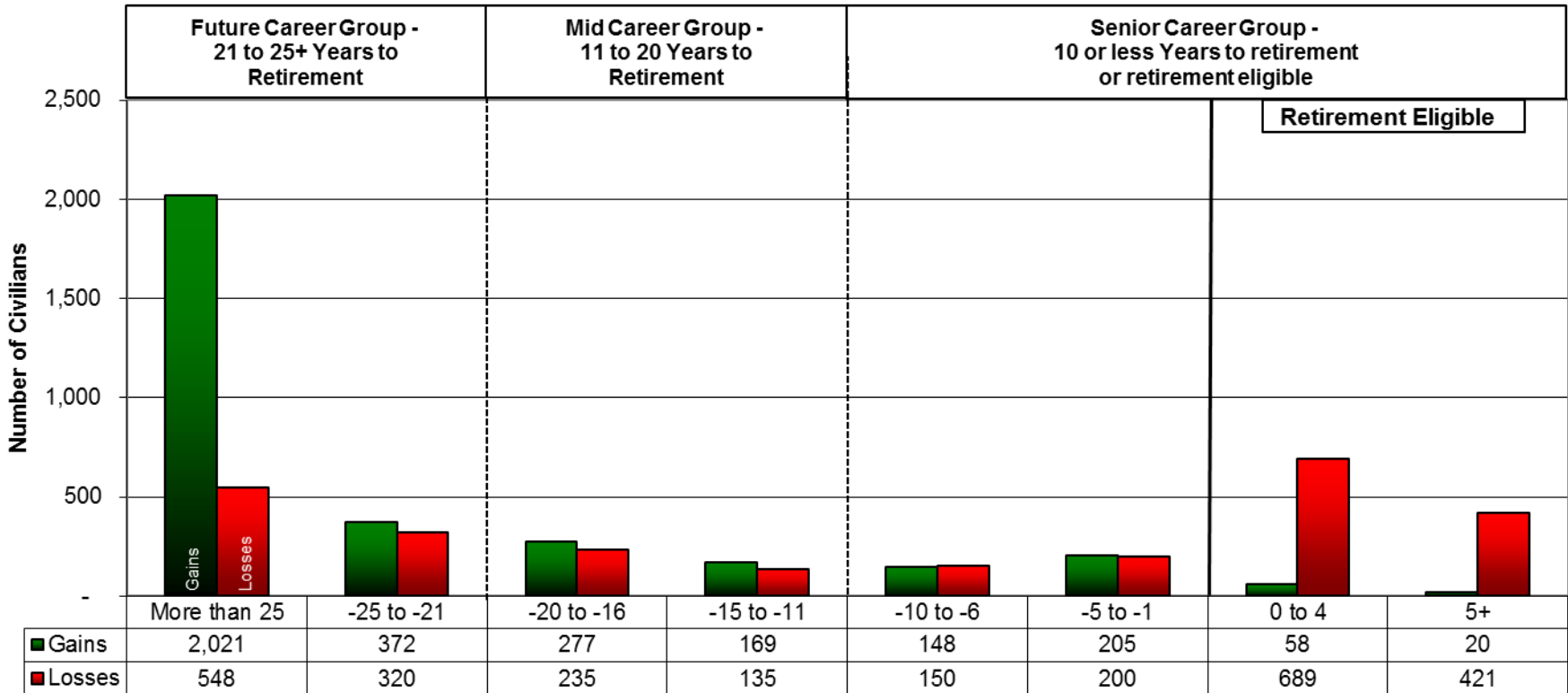




# Engineering Gains and Losses by YRE Groups

## Defense Acquisition Workforce (Civilian) - Engineering

Workforce Lifecycle FY2018Q2 Gains & Losses\*

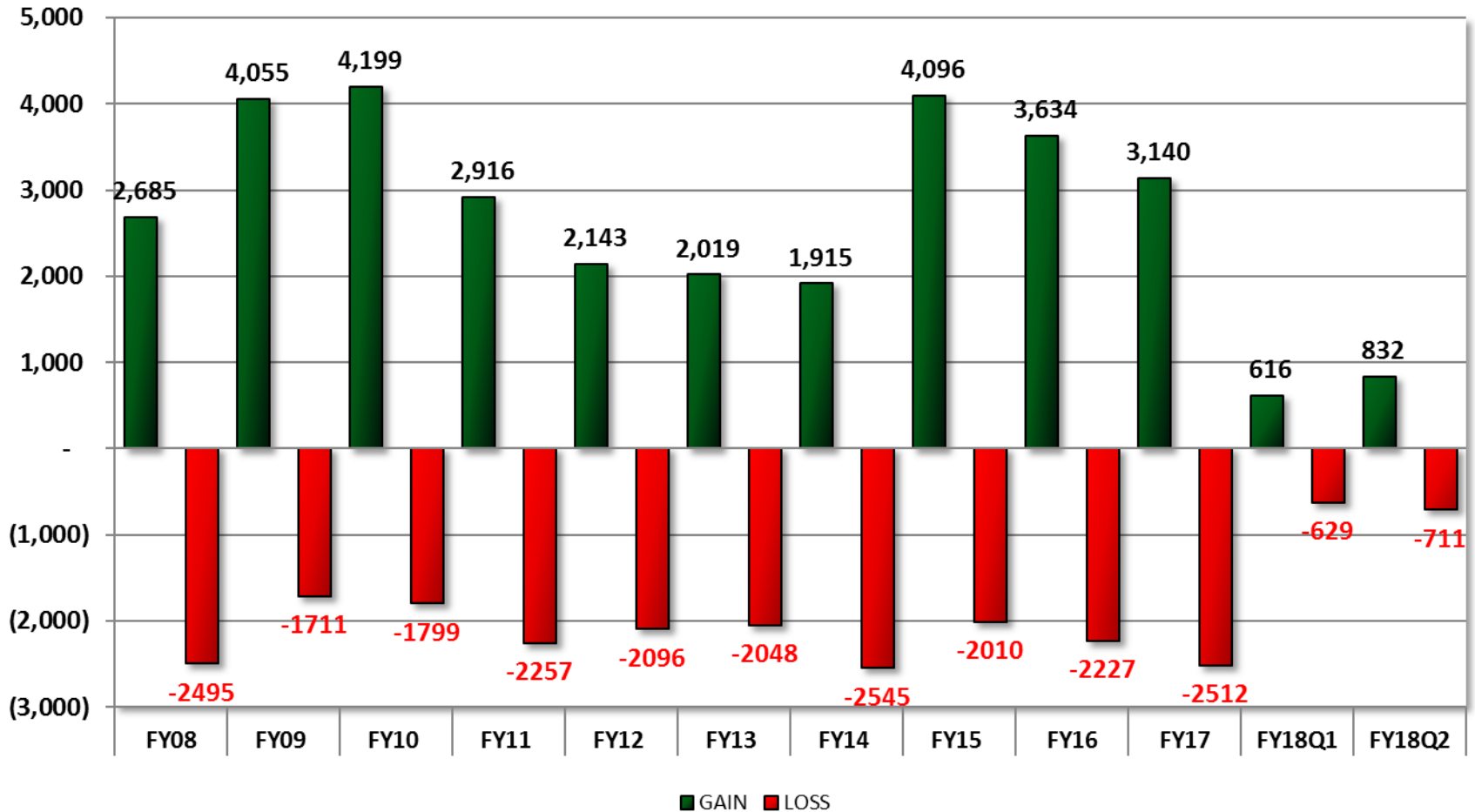


Career Lifecycle by Years to Retirement Eligibility

\*Does not include administrative gains and losses



# Engineering Historical Gains and Losses FY08 – FY18Q2



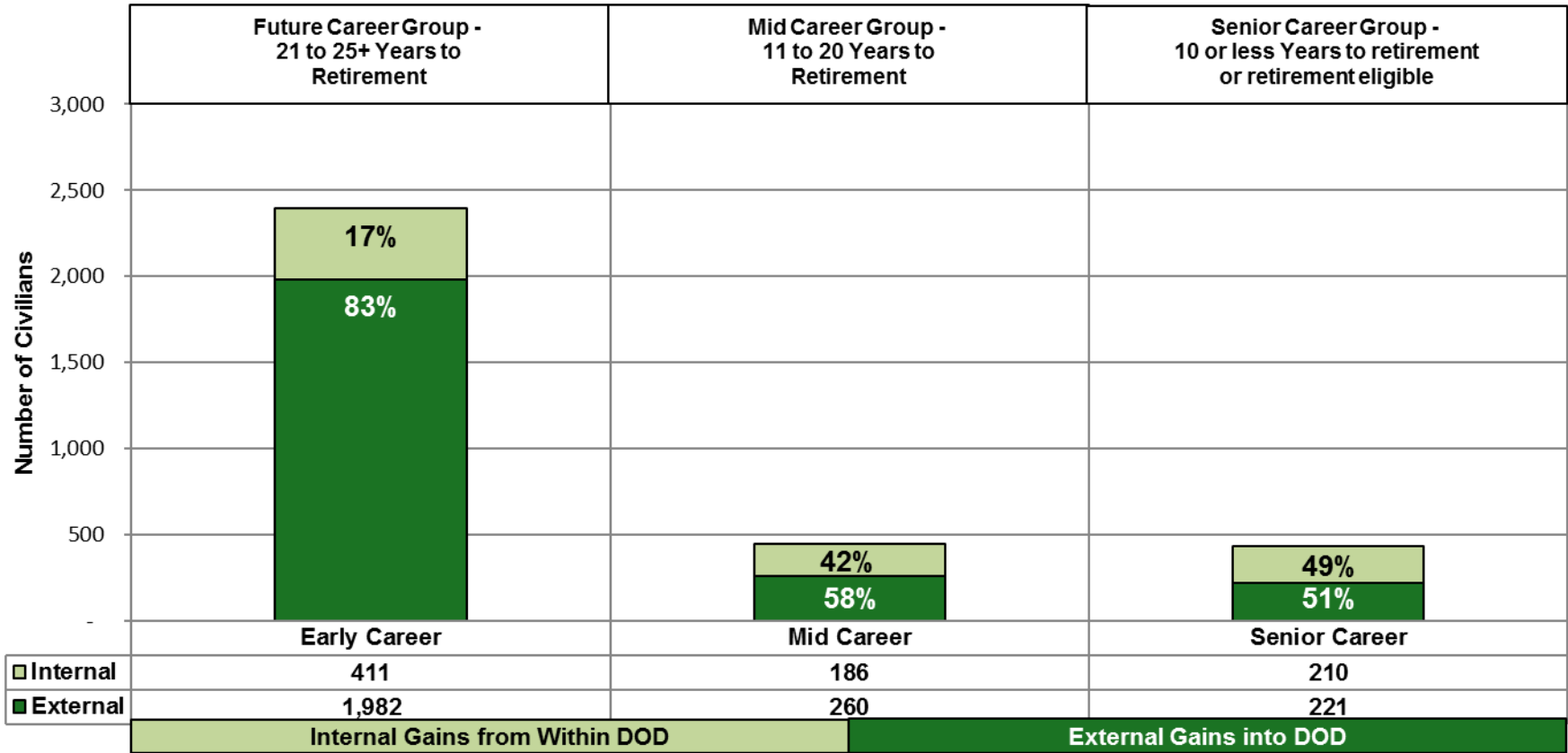
As of 31 Mar 2018



# Engineering Internal/External Gains % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering Workforce Lifecycle FY2018Q2 Gains\*



\*Does not include administrative gains

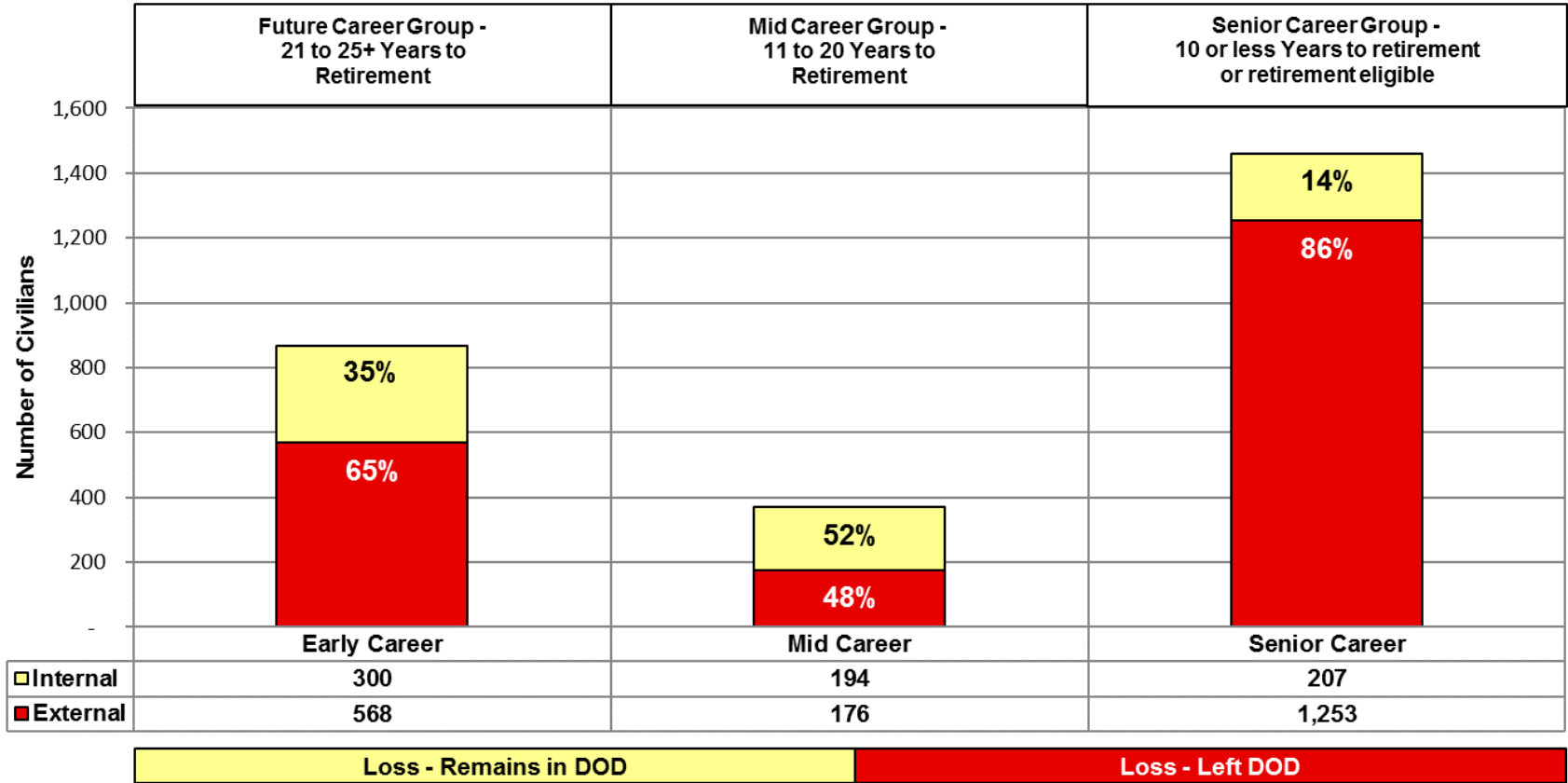
Source: RAND NDRI Forces and Resources Policy Center analysis using DMDC data (FY2018Q2 and Previous FY Data)



# Engineering Internal/External Loss % by Career Group

## Defense Acquisition Workforce (Civilian) - Engineering

### Workforce Lifecycle FY2018Q2 Losses\*



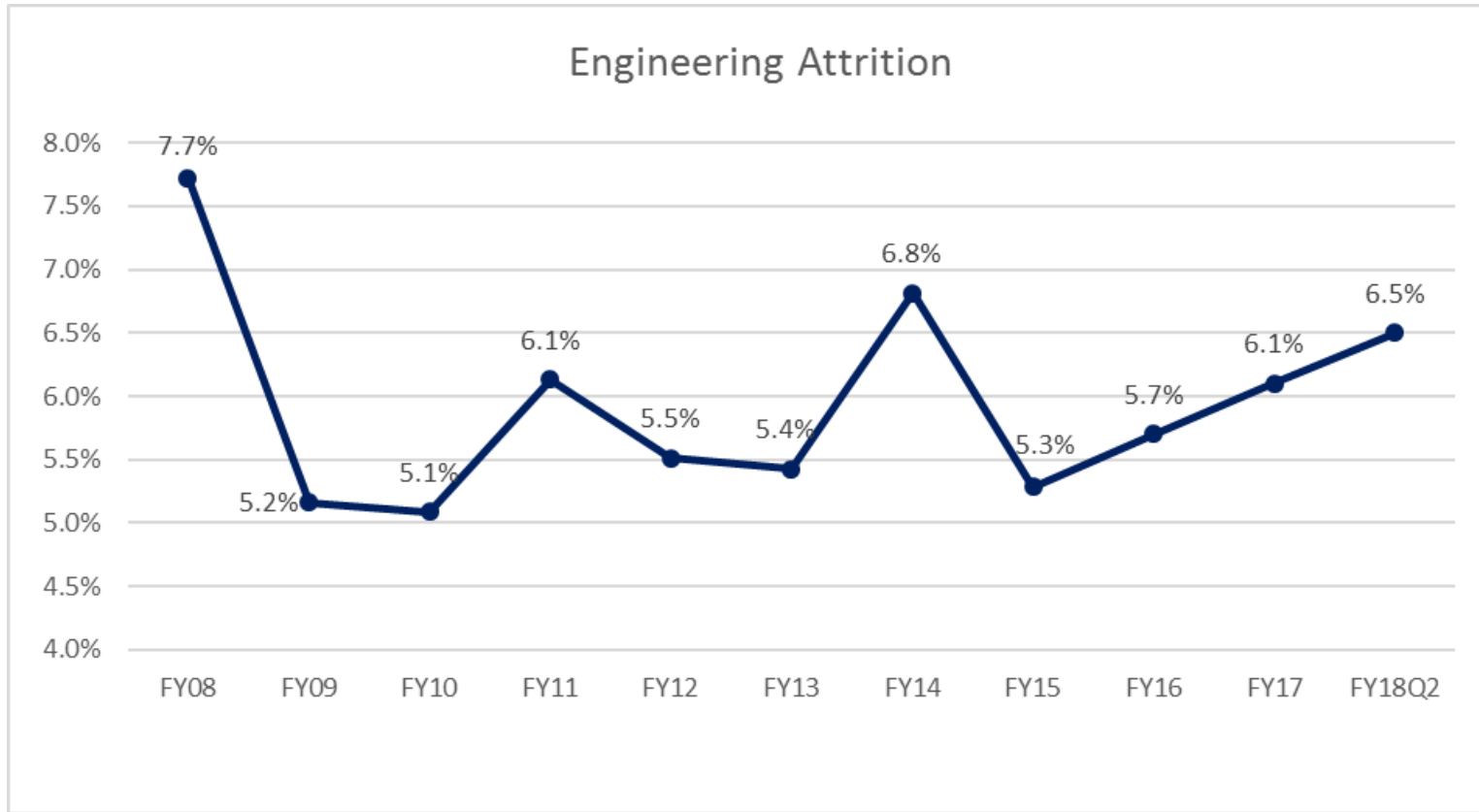
Source: RAND NDRI Forces and Resources Policy Center analysis using DMDC data (FY2018Q2 and Previous FY Data)

\*Does not include administrative losses





# Attrition Rates

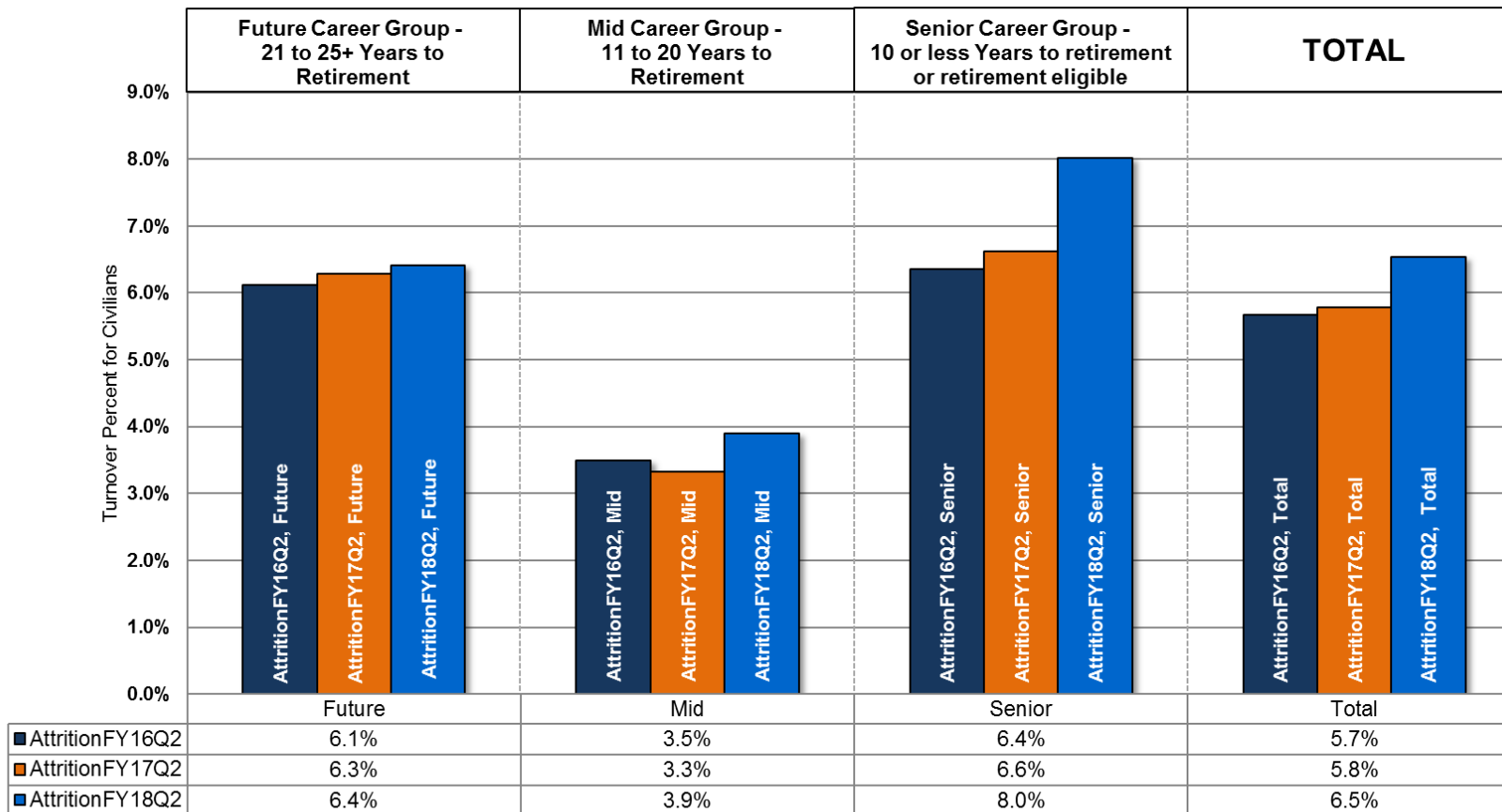


\*FY18Q2 includes attrition rate from end of FY17Q2 through FY18Q2



# Engineering Attrition Rates by Career Group

## Defense Acquisition Workforce Attrition - Engineering (Civilian) (FY16Q2, FY17Q2, FY18Q2)(by Career Lifecycle Group)



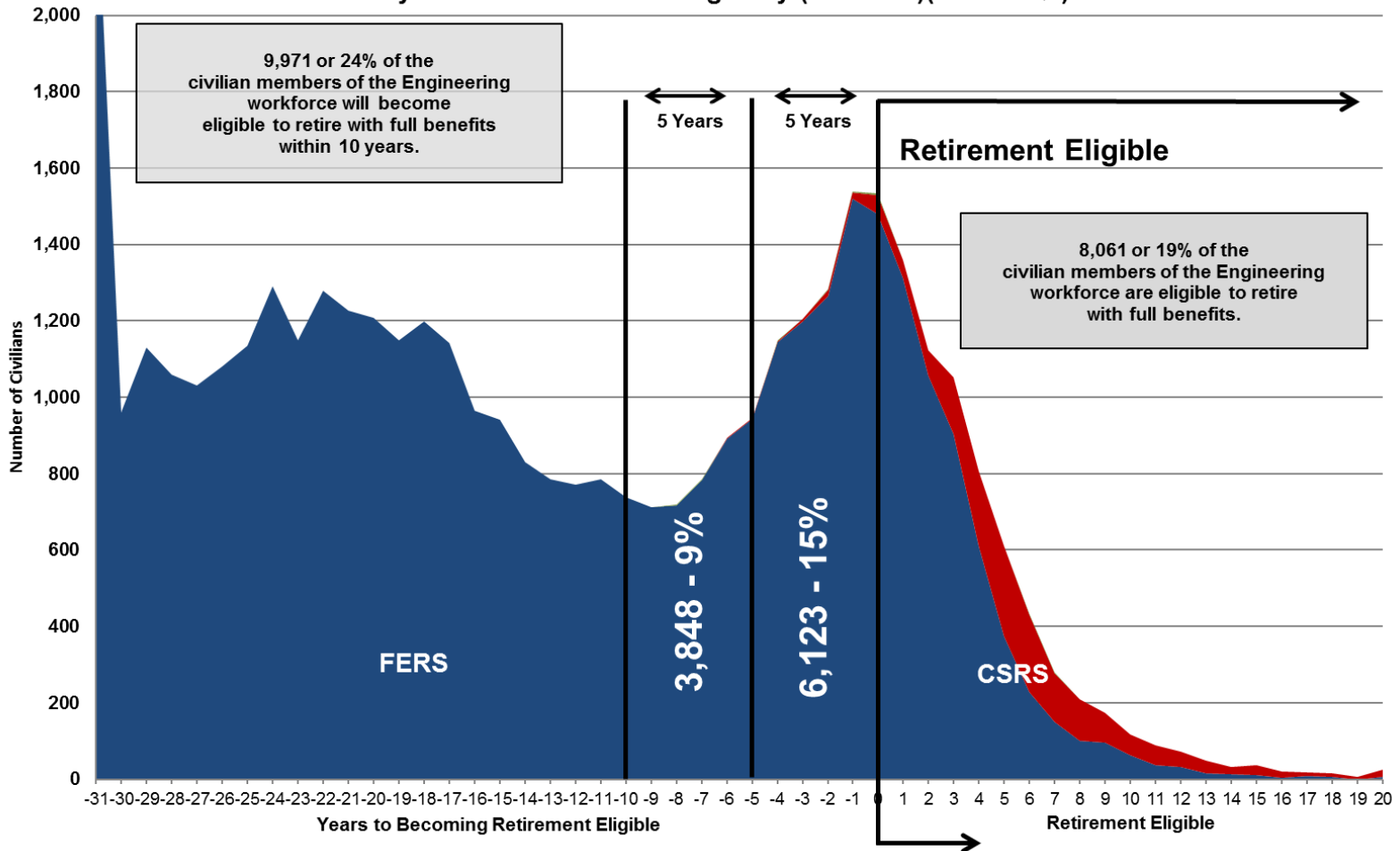


# Engineering Civilian Distribution by Years to Retirement Eligibility



## Defense Acquisition Workforce - Engineering

### Distribution by Years to Retirement Eligibility (Civilians)(FY2018Q2)



As of 31 Dec 2018



***END***