



# Defense Acquisition Workforce Key Information

Engineering

As of FY18Q1 (31 December 2017)



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# Fact Sheet



Human Capital Fact Sheet								
Defense Acquisition Workforce Engineering	FY 2008				FY2017Q4			
	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	41,618	1,531	43,149	165,275
Change in size from 2008	-	-	-	-	29%	-28%	25%	31%
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%	98%	84%
Graduate Degree	36%	45%	36%	29%	41%	63%	42%	40%
<b>Certification</b>								
Level I or Higher Achieved	78%	57%	77%	72%	89%	78%	89%	86%
Level II or Higher Achieved	70%	25%	68%	61%	75%	50%	74%	73%
Level III Achieved	58%	8%	55%	36%	55%	20%	54%	42%
Position Certification Requirement Met or Exceeded	67%	31%	64%	58%	84%	59%	83%	76%
Within 24 Months of Certification Requirement	18%	52%	20%	27%	15%	37%	15%	21%
Does Not Meet Certification Requirement	15%	17%	15%	14%	2%	4%	2%	3%
<b>Planning Considerations</b>								
% Baby Boomer / Traditional Gen.	60%	8%	57%	62%	32%	0%	31%	33%
Average Age	45	33	44	46	43	32	43	45
Workforce Life-Cycle Model (YRE)*	27/24/49(%)	-	-	20/23/57 (%)(Civ)	35/23/43(%)	-	-	26/26/48(%)
% Future/Mid-Career/Senior								
Average Years of Service	17	9	16	17	15	9	15	15
Retirement Eligible*	3,965(12%)	-	-	19,051(17%) (Civ)	6,871(17%)	-	-	25,405(17%)
Retirement Eligible w/in 5 Years*	4,804(15%)	-	-	21,315(19%) (Civ)	6,708(16%)	-	-	25,576(17%)
Total Gains/Losses*	4,050/4,197	-	-	14,245/15,030 (Civ)	3,783/3,094	-	-	14,944/11,347

Source: The Human Capital Fact Sheet is based on end of FY2008 and FY2017Q4 data and was generated by OUSD(AT&L)/Human Capital Initiatives using the AT&L Workforce Data Mart.

\*Analysis support from RAND using FY2008 and FY2017Q4 DMDC data.



## Defense Acquisition Workforce Size Highlights

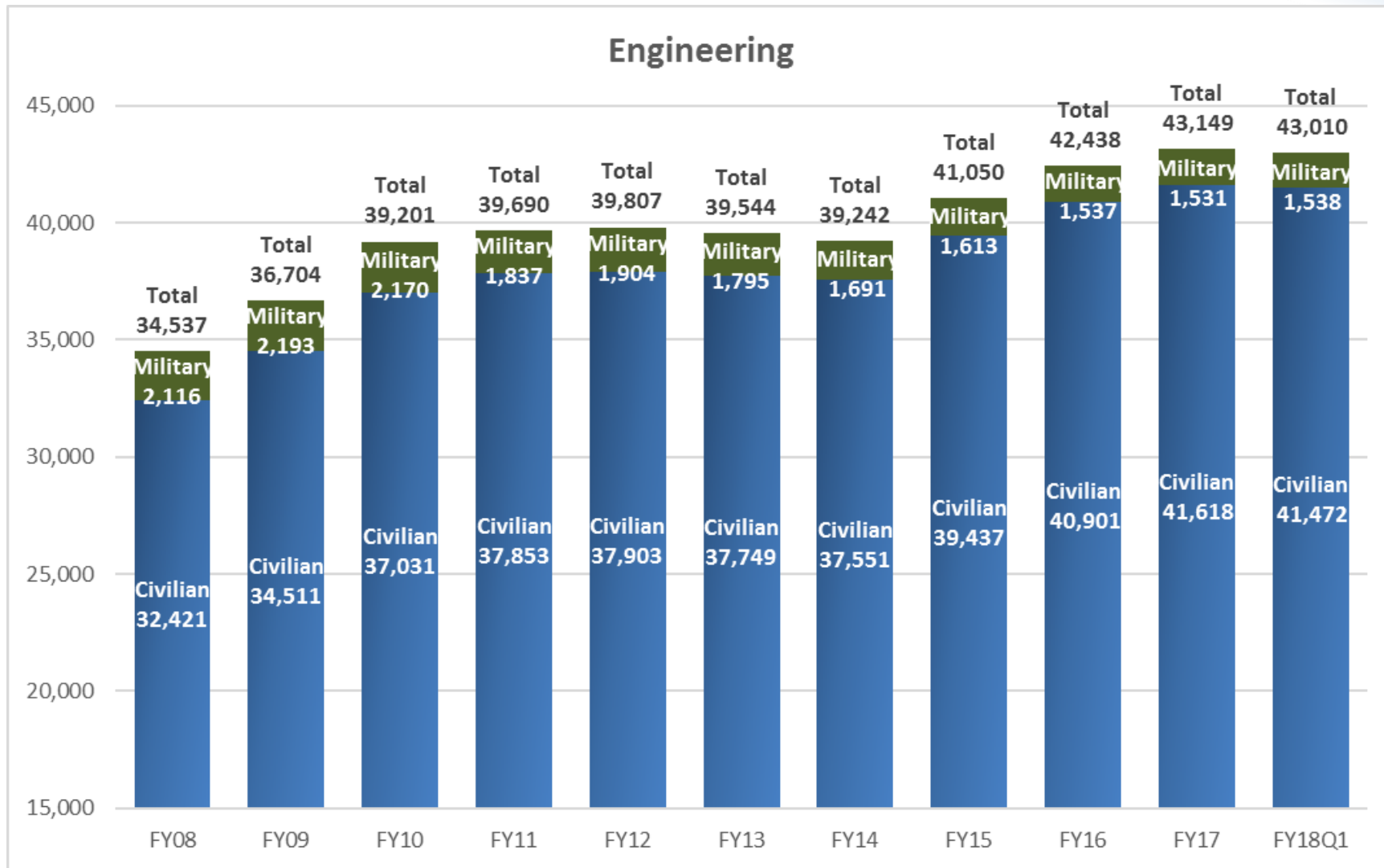
- The Engineering Defense Acquisition Workforce has seen a steady increase since FY14 growing from 39,242 to 43,149 at the end of FY17.
- Engineering continues to be the largest career field in the Acquisition Force accounting for 26% of the total force.
- Navy Engineering has grown 15% (2,874) since FY14. Air Force has experienced a 9% increase (803) as well.
- Although Engineering still has one of the lowest attrition rates amongst the Career Fields at 6.1%, there has been a gradual increase (15%) since FY15.
- recodes

## Defense Acquisition Workforce DAWIA Certification Highlights

- The Engineering Career Field DAWIA Meets/Exceeds certification rate is over 82%; the highest rate of the 14 career fields.

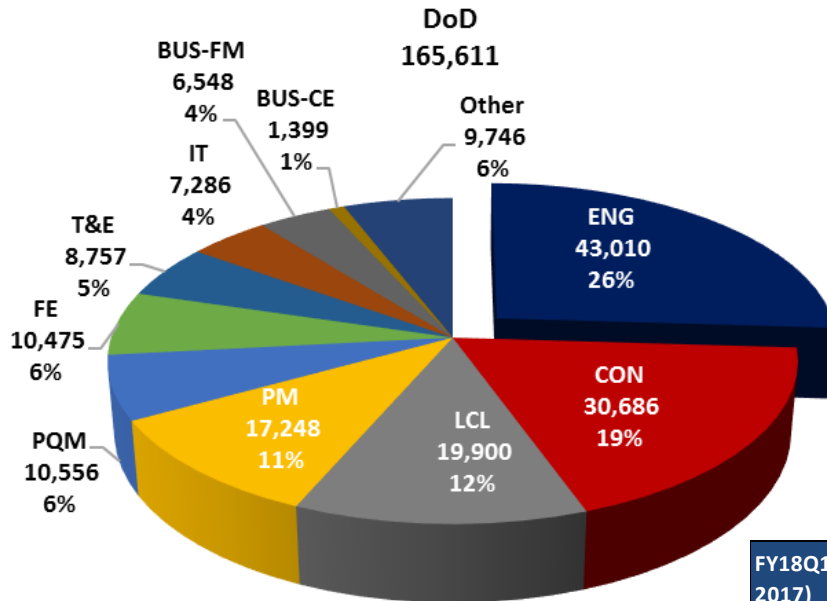


# Engineering Total Workforce





# AWF by Component and Career Field



FY18Q1 Totals (as of 12-31-2017)	Army	Navy	Marine Corps	Air Force	4th Estate	Totals	% Total
Auditing	-	-	-	-	4,120	4,120	2.5%
Business - CE	257	527	37	498	80	1,399	0.8%
Business - FM	1,737	2,029	174	2,080	528	6,548	4.0%
Contracting	7,943	5,984	531	8,289	7,939	30,686	18.5%
Engineering	9,084	22,276	339	9,178	2,133	43,010	26.0%
Facilities Engineering	4,207	5,573	31	573	91	10,475	6.3%
Information Technology	1,735	2,964	215	1,334	1,038	7,286	4.4%
Life Cycle Logistics	7,011	5,858	612	3,301	3,118	19,900	12.0%
Production, Quality and Man	1,395	3,406	43	431	5,281	10,556	6.4%
Program Management	3,305	5,467	756	5,892	1,828	17,248	10.4%
Property	47	67	-	18	268	400	0.2%
Purchasing	389	392	47	62	520	1,410	0.9%
S&T Manager	469	515	4	2,668	120	3,776	2.3%
Test and Evaluation	1,860	3,229	128	3,170	370	8,757	5.3%
Unknown/Other	8	24	-	1	7	40	0.02%
<b>FY18Q1 Totals (as of 12-31-2017)</b>	<b>39,447</b>	<b>58,311</b>	<b>2,917</b>	<b>37,495</b>	<b>27,441</b>	<b>165,611</b>	
<b>Component %</b>	<b>23.8%</b>	<b>35.2%</b>	<b>1.8%</b>	<b>22.6%</b>	<b>16.6%</b>		



# Engineering Workforce Historical Size by Agency FY08 – FY18Q1



Engineering Defense Acq Workforce Agency	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18Q1	% 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	22,276	36%	0%
MARINE CORPS	223	275	338	401	377	405	374	365	354	341	339	52%	-1%
ARMY	10,769	10,208	10,644	10,108	9,810	9,419	8,981	8,986	9,140	9,096	9,084	-16%	0%
AIR FORCE	6,429	7,197	7,625	8,514	8,649	8,521	8,473	8,903	9,139	9,276	9,178	43%	-1%
DCMA	282	660	813	917	974	1,134	1,157	1,181	1,271	1,229	1,226	335%	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	597	112%	-1%
DISA	89	74	58	69	69	76	74	70	70	66	68	-24%	3%
DTRA	7	11	27	17	35	45	44	43	47	35	31	343%	-11%
DHA	2	8	9	9	10	8	6	2	4	8	8	300%	0%
DAU	33	41	46	48	49	45	40	38	45	43	46	39%	7%
NRO	-	-	-	-	-	-	-	-	66	78	78		0%
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	6		0%
DMEA	-	-	29	26	23	23	20	20	32	31	32		3%
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>43,010</b>	<b>↑ 25%</b>	<b>↓ 0%</b>



# Engineering Workforce Historical Size (Quarterly) by Agency FY16Q1 – FY18Q1



Engineering Defense Acq Workforce Agency	FY16Q1	FY16Q2	FY16Q3	FY16Q4	FY17Q1	FY17Q2	FY17Q3	FY17Q4	FY18Q1	% Change Since FY17Q1
Navy	20,811	20,887	21,196	21,623	21,652	21,668	21,777	22,297	22,276	3%
ARMY	9,079	9,063	9,061	9,140	9,145	9,122	9,008	9,096	9,084	-1%
AIR FORCE	8,795	8,949	8,686	9,139	9,126	9,221	9,211	9,276	9,178	1%
MARINE CORPS	363	356	353	354	355	353	357	341	339	-5%
DCMA	1,181	1,206	1,221	1,271	1,275	1,262	1,239	1,229	1,226	-4%
DLA	13	13	12	13	13	12	13	14	14	8%
MDA	577	583	588	601	600	597	605	603	597	-1%
DISA	67	67	64	70	73	73	72	66	68	-7%
DTRA	42	43	46	47	43	42	39	35	31	-28%
DHA	2	4	4	4	4	4	6	8	8	100%
DAU	37	42	46	45	44	44	46	43	46	5%
NRO	-	57	60	66	68	72	75	78	78	15%
OSD	23	23	22	22	22	22	23	22	22	0%
DeCA	-	-	1	3	3	2	1	3	4	33%
JCS	8	8	8	7	7	7	7	6	6	-14%
DMEA	20	23	30	32	31	31	31	31	32	3%
TRMC	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>↑ 1%</b>

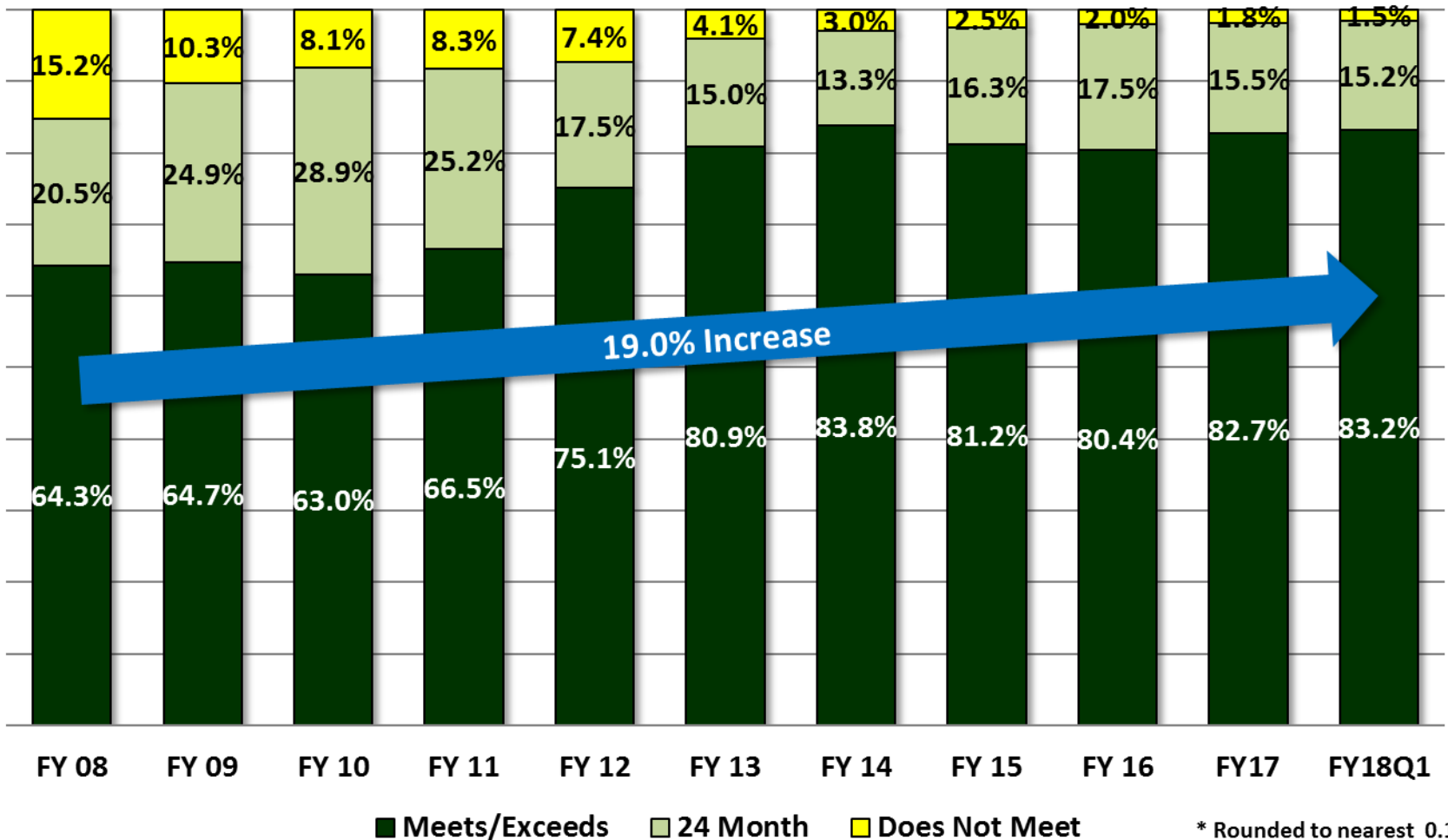




# Engineering Manager Historical DAWIA Certification FY08 – FY18Q1



## Engineering



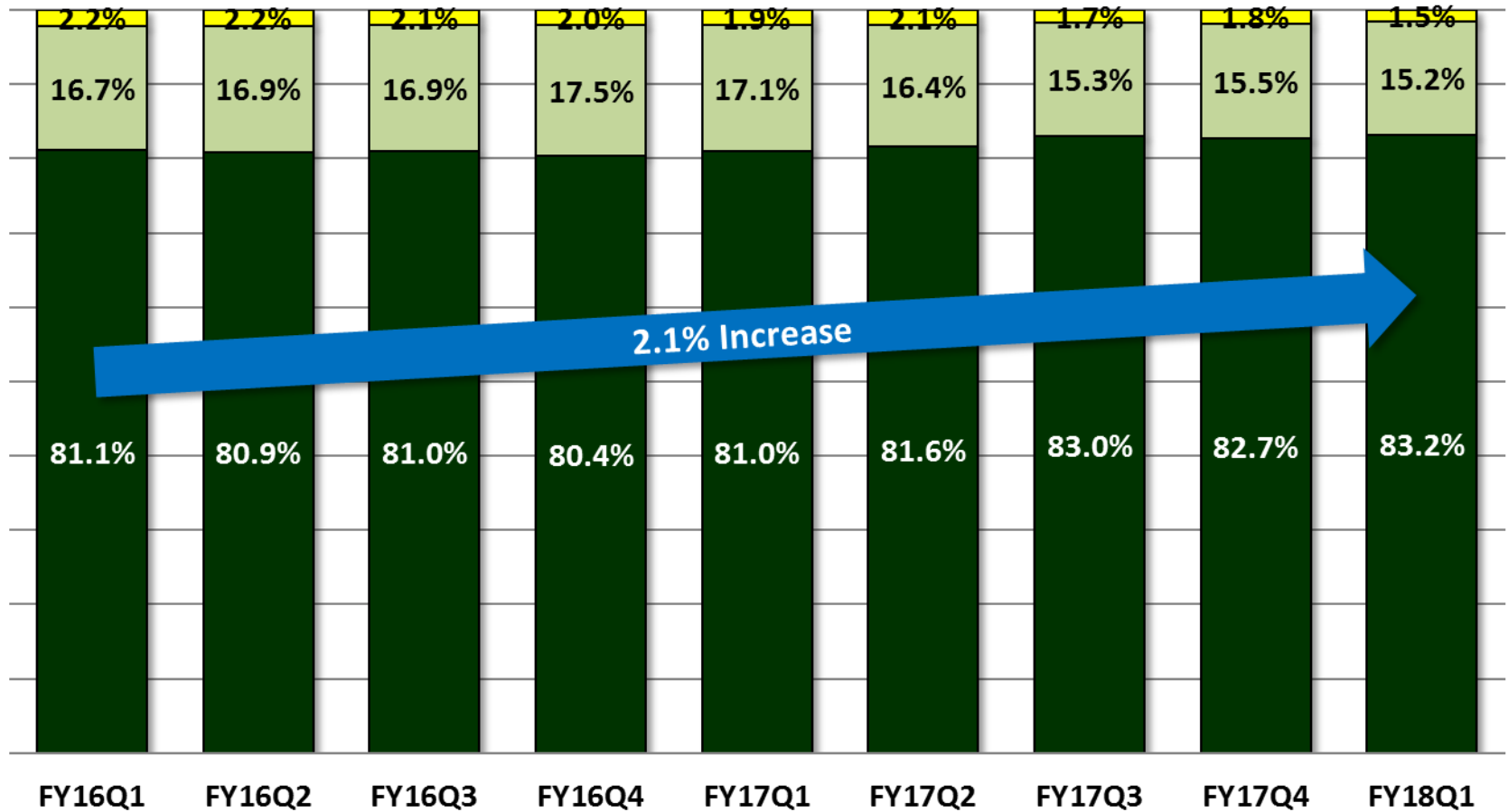
19.0% Increase



# Engineering Manager Historical (Quarterly) DAWIA Certification FY16Q1 – FY18Q1



## Engineering



■ Meets/Exceeds   ■ 24 Month   ■ Does Not Meet

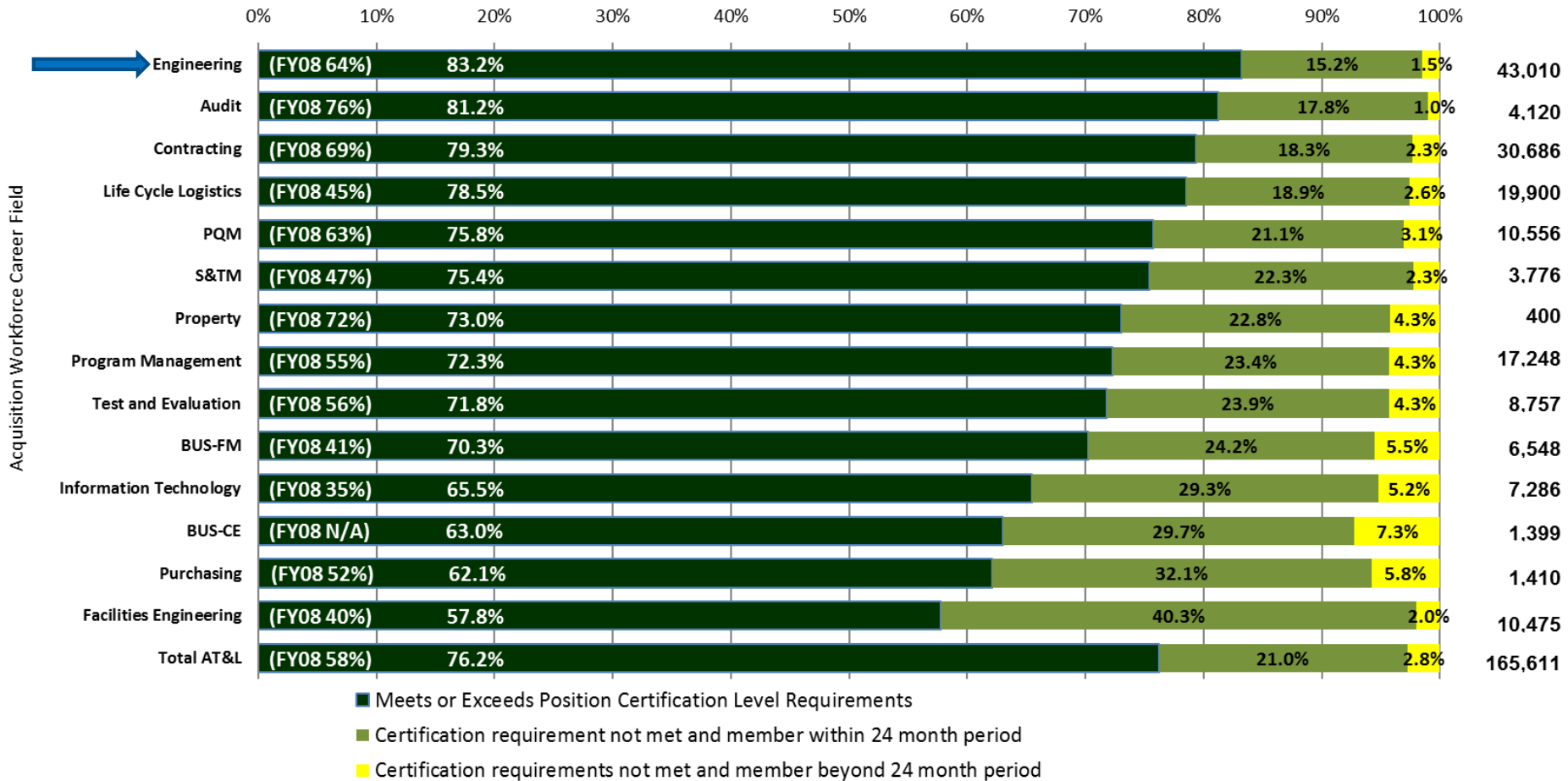
\* Rounded to nearest 0.1%



# DAWIA Certification by Career Field



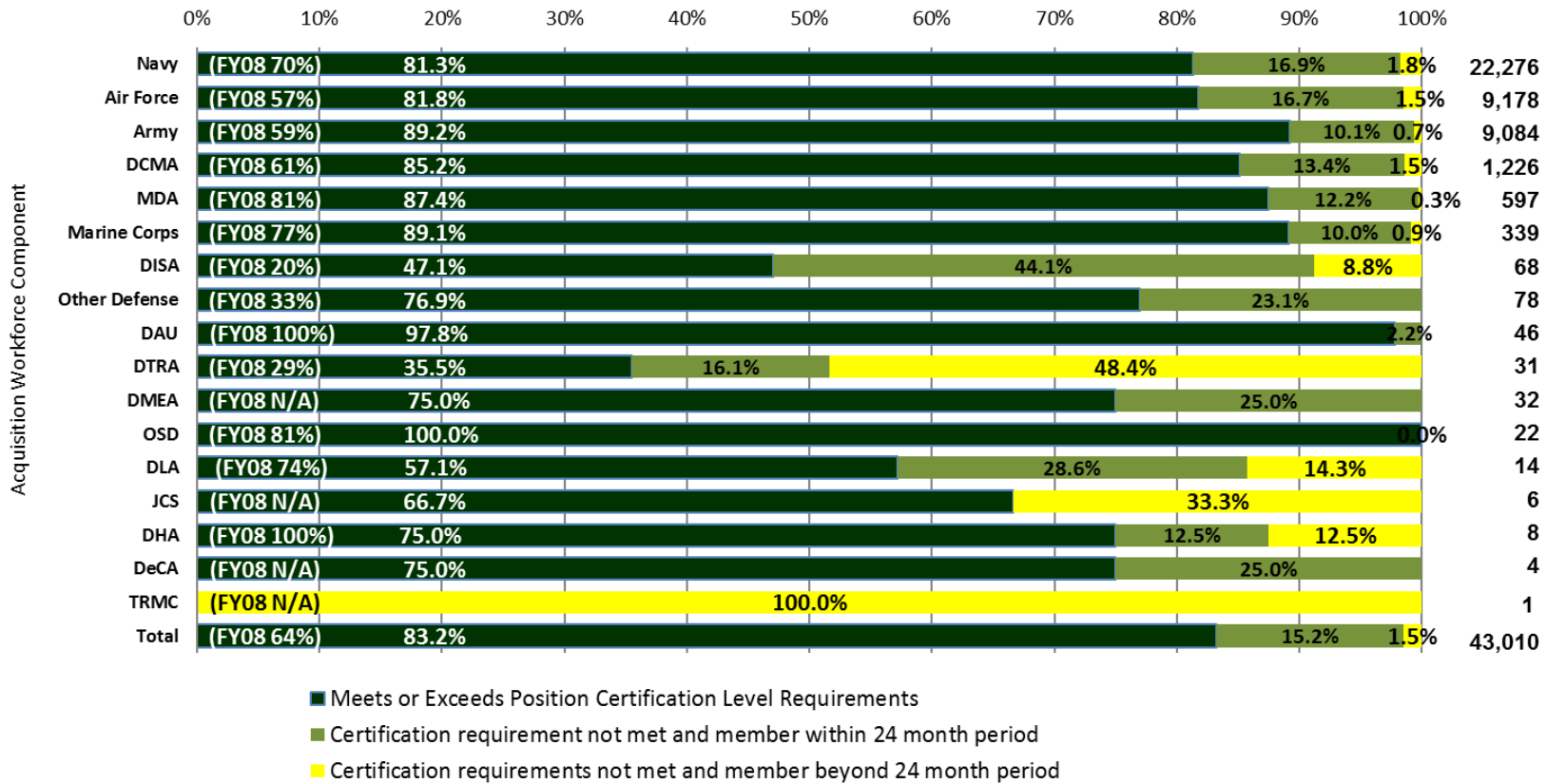
## Certification Level "Meet/Exceed" Rates by Career Field AT&L (FY18Q1)





# Engineering DAWIA Certification by Component

## Certification Level "Meet/Exceed" Rates by Component Engineering (FY18Q1)





# Engineering DAWIA Certification Matrix + Bench Strength

Engineering		Achieved Certification Level				FY18Q1 TOTAL	% Meets Certification Requirement
Required Certification Level	No Level Achieved	Level I	Level II	Level III			
Level I	2,635	4,218	1,586	1,780	10,219	74.2%	
Level II	1,500	1,840	6,937	7,500	17,777	81.2%	
Level III	451	226	551	13,782	15,010	91.8%	
Unspecified	2	1	-	1	4		
<b>FY18Q1 TOTAL</b>	<b>4,588</b>	<b>6,285</b>	<b>9,074</b>	<b>23,063</b>	<b>43,010</b>	<b>83.2%</b>	
	10.7%	14.6%	21.1%	53.6%			

No Level Achieved includes those within the 24 month grace period

Bench Strength			
Org	# Meet or Exceeds	% Meets or Exceeds*	Career Field Rank
DAW	126,184	76.2%	
Army	31,296	79.3%	
Navy	44,384	76.1%	
Marine Cor	2,055	70.4%	
Air Force	26,949	71.9%	
4th Estate	21,500	77.6%	
Engineering	35,803	83.2%	1 of 14

\*\* Based on population total without unspecified positions

Certification Requirement	Meets	Within 24 Months	Does Not Meet	DAW TOTAL	
Level I	7,584	2,603	32	10,219	23.8%
Level II	14,437	2,930	410	17,777	41.3%
Level III	13,782	1,019	209	15,010	34.9%
Unspecified	1	3	-	4	0.0%
<b>Engineering TOTAL</b>	<b>35,804</b>	<b>6,555</b>	<b>651</b>	<b>43,010</b>	
	83.2%	15.2%	1.5%		

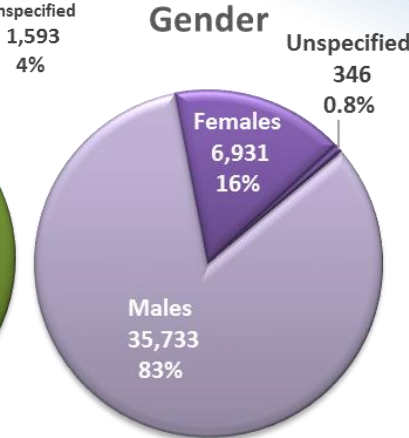
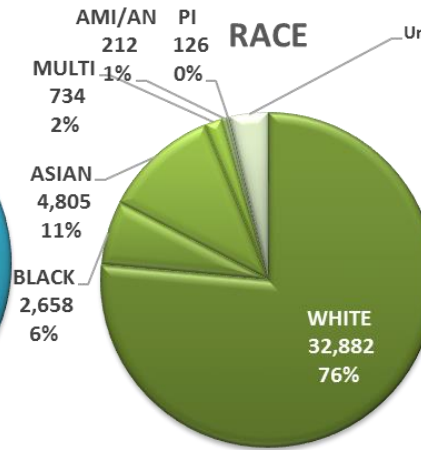
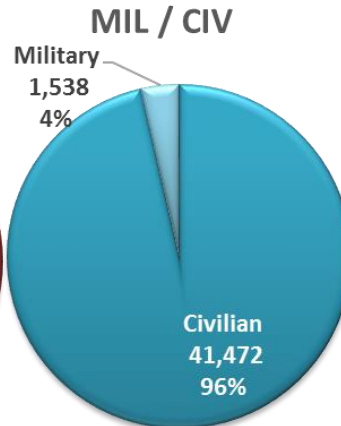
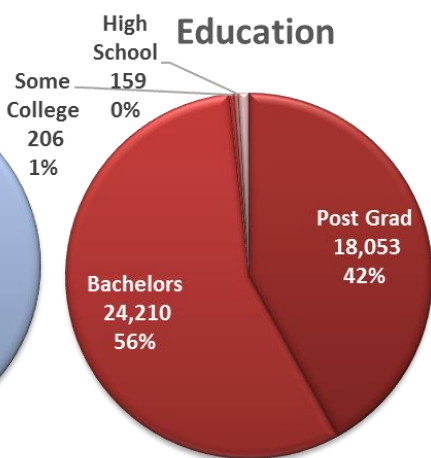
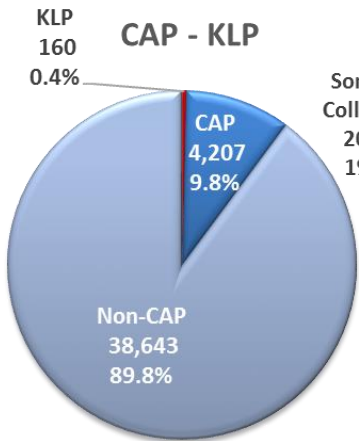
= Compliance

= Exceeds Requirements

\* NOTE: Rounded to nearest 0.1%



# Demographics



Occupied Position Type	Engineering	Entire DAW
Key Leadership Positions (KLPs)	160	0.4%
Critical Acquisition Positions (CAPs)	4,207	9.8%
Non-CAP Positions	38,643	89.8%
Unknown	-	0.0%
<b>TOTAL</b>	<b>43,010</b>	<b>165,611</b>

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

Highest Level of Education	Engineering	Entire DAW
Post Grad	18,053	42.0%
Bachelors	24,210	56.3%
Some College	206	0.5%
High School	159	0.4%
Other	382	0.9%
<b>TOTAL</b>	<b>43,010</b>	<b>165,611</b>

Military / Civilian	Engineering	Entire DAW
Civilian	41,472	96.4%
Military	1,538	3.6%
<b>TOTAL</b>	<b>43,010</b>	<b>165,611</b>

Race	Engineering	Entire DAW
WHITE	32,882	76.5%
BLACK	2,658	6.2%
ASIAN	4,805	11.2%
MULTI	734	1.7%
AMI/AN	212	0.5%
PI	126	0.3%
Unspecified	1,593	3.7%
<b>TOTAL</b>	<b>43,010</b>	<b>165,611</b>

Gender	Engineering	Entire DAW
Males	35,733	83.1%
Females	6,931	16.1%
Unspecified	346	0.8%
<b>TOTAL</b>	<b>43,010</b>	<b>165,611</b>



# Engineering Size by Occupational Series

Civilian Occupational Series	Engineering	
0855 - Engineer, Electronics	10,545	25.4%
0801 - Engineer, General	8,325	20.1%
0830 - Engineer, Mechanical	6,511	15.7%
0861 - Engineer, Aerospace	2,917	7.03%
0854 - Engineer, Computers	2,677	6.45%
0850 - Engineer, Electrical	1,646	3.97%
1550 - Computer Scientist	3,958	9.54%
1515 - Operations Research Analyst	640	1.54%
1310 - Physicist	613	1.48%
0893 - Engineer, Chemical	498	1.20%
0896 - Engineer, Industrial	406	0.98%
0871 - Architect, Naval	385	0.93%
0806 - Engineer, Materials	338	0.82%
1320 - Chemist	296	0.71%
1520 - Mathematician	499	1.20%
<i>Other</i>	1,218	2.94%
<b>TOTAL CIVILIAN</b>	<b>41,472</b>	<b>Civilians</b>

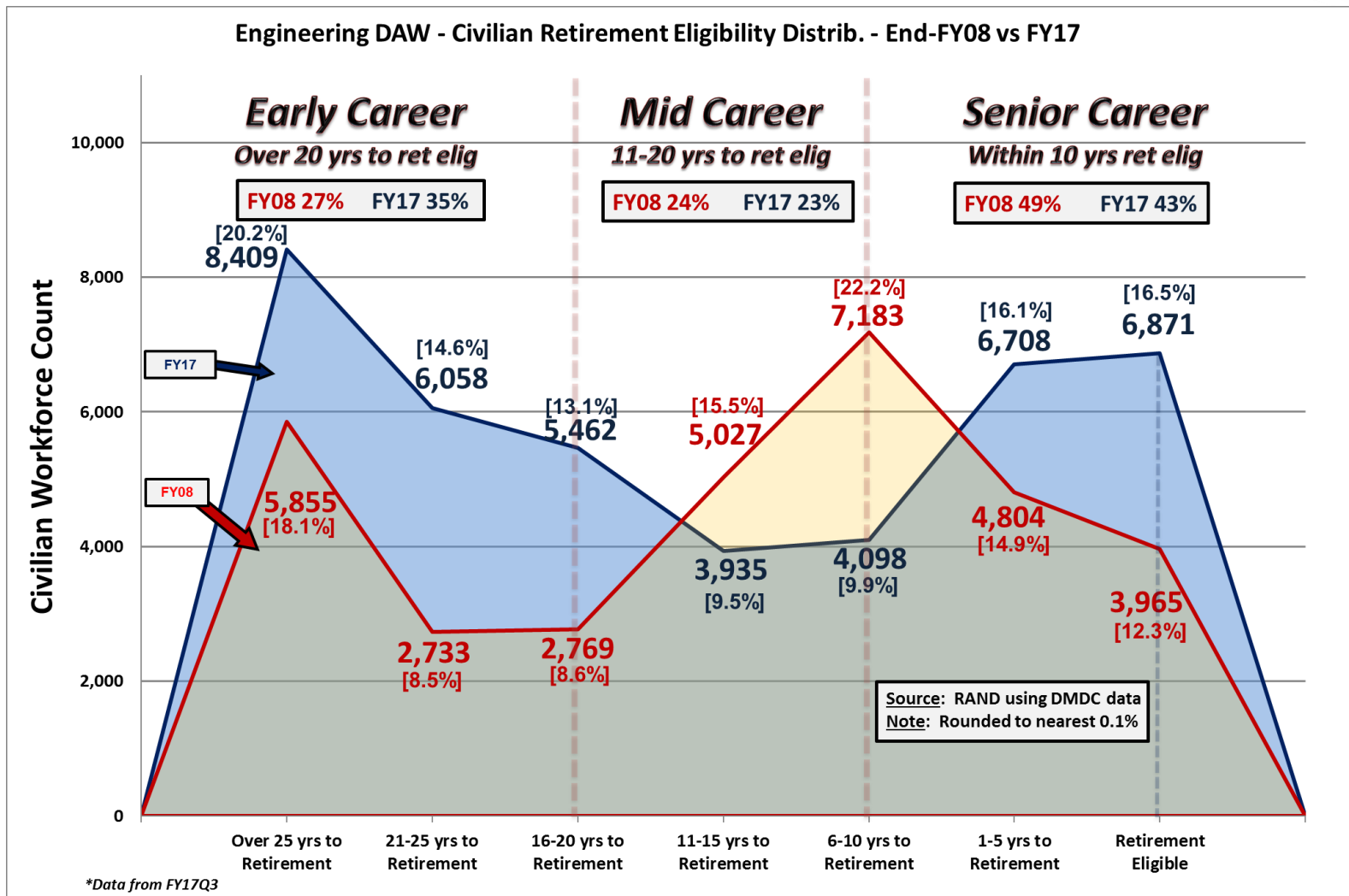


# **RAND NDRI Forces and Resources Policy Center Data Retirement / Loss Slides**



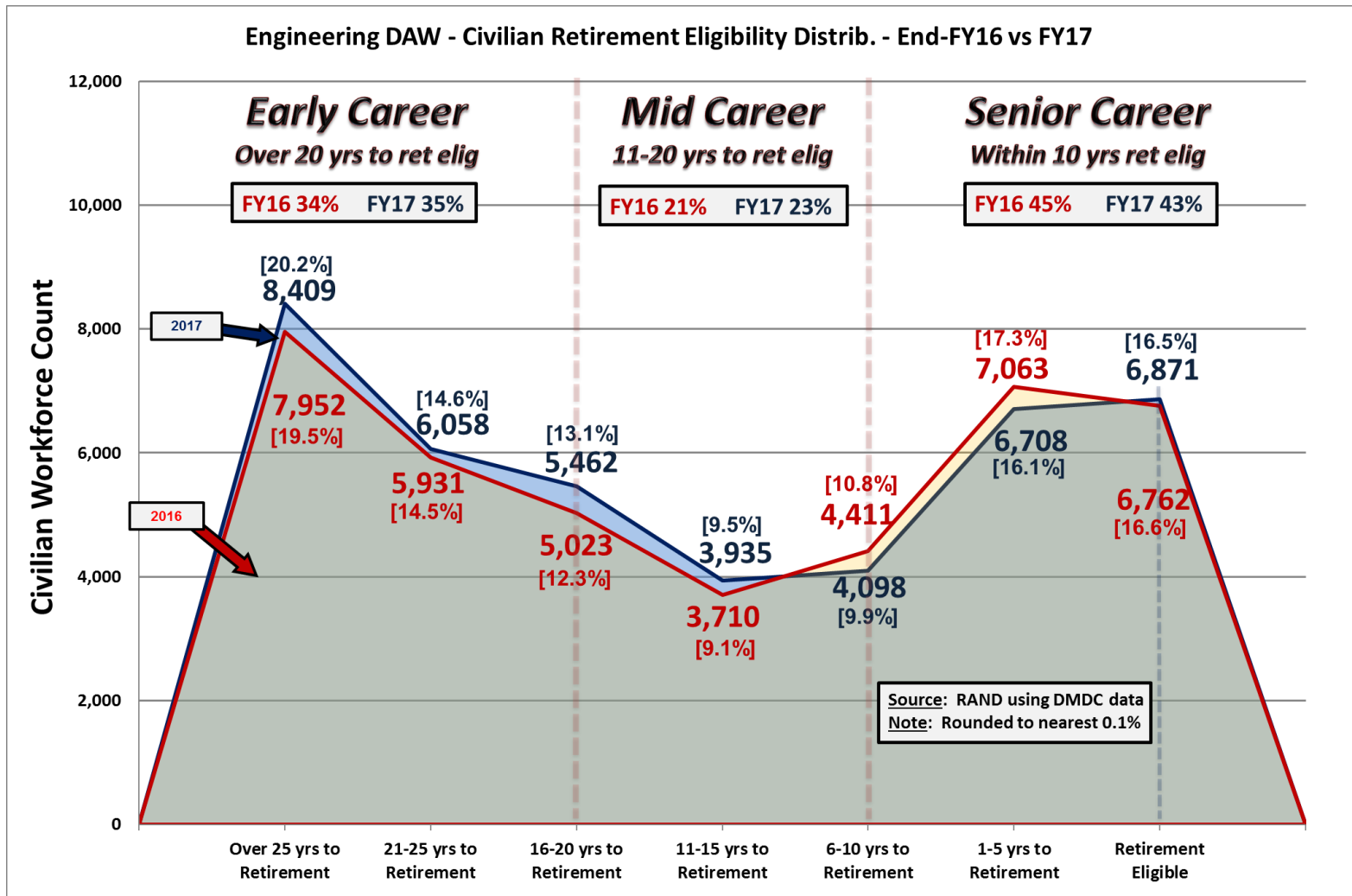


# Engineering Civilian Retirement Eligibility Distribution – FY08 / FY17





# Engineering Civilian Retirement Eligibility Distribution – (1 year) FY16 / FY17

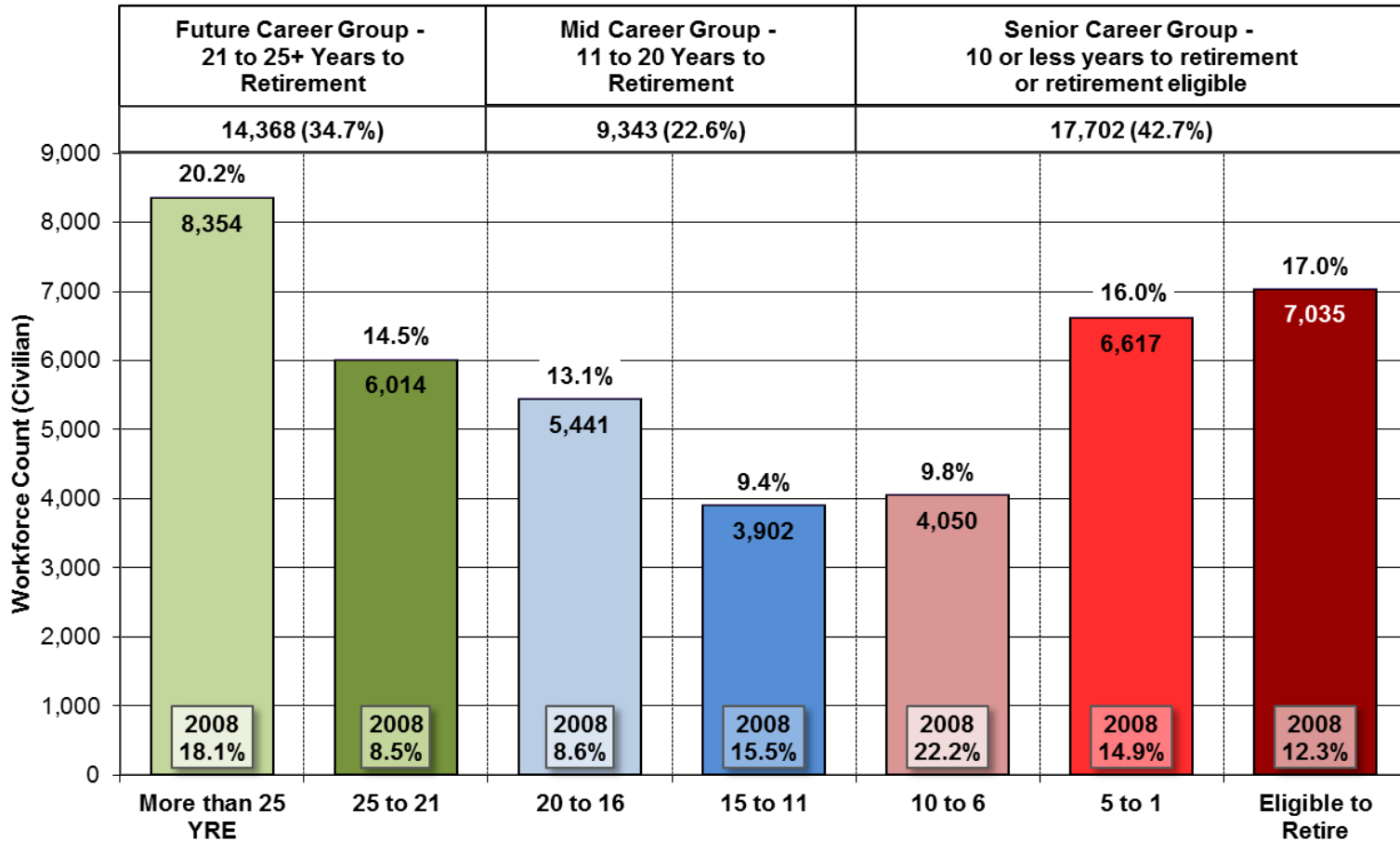


As of 30 Sep 2017



# Engineering Workforce Lifecycle Model by YRE

**Defense Acquisition Workforce Lifecycle Model (WLM)**  
by Years to Retirement Eligibility (YRE) - Civilian (FY2018Q1) - Engineering



As of 31 Dec 2017

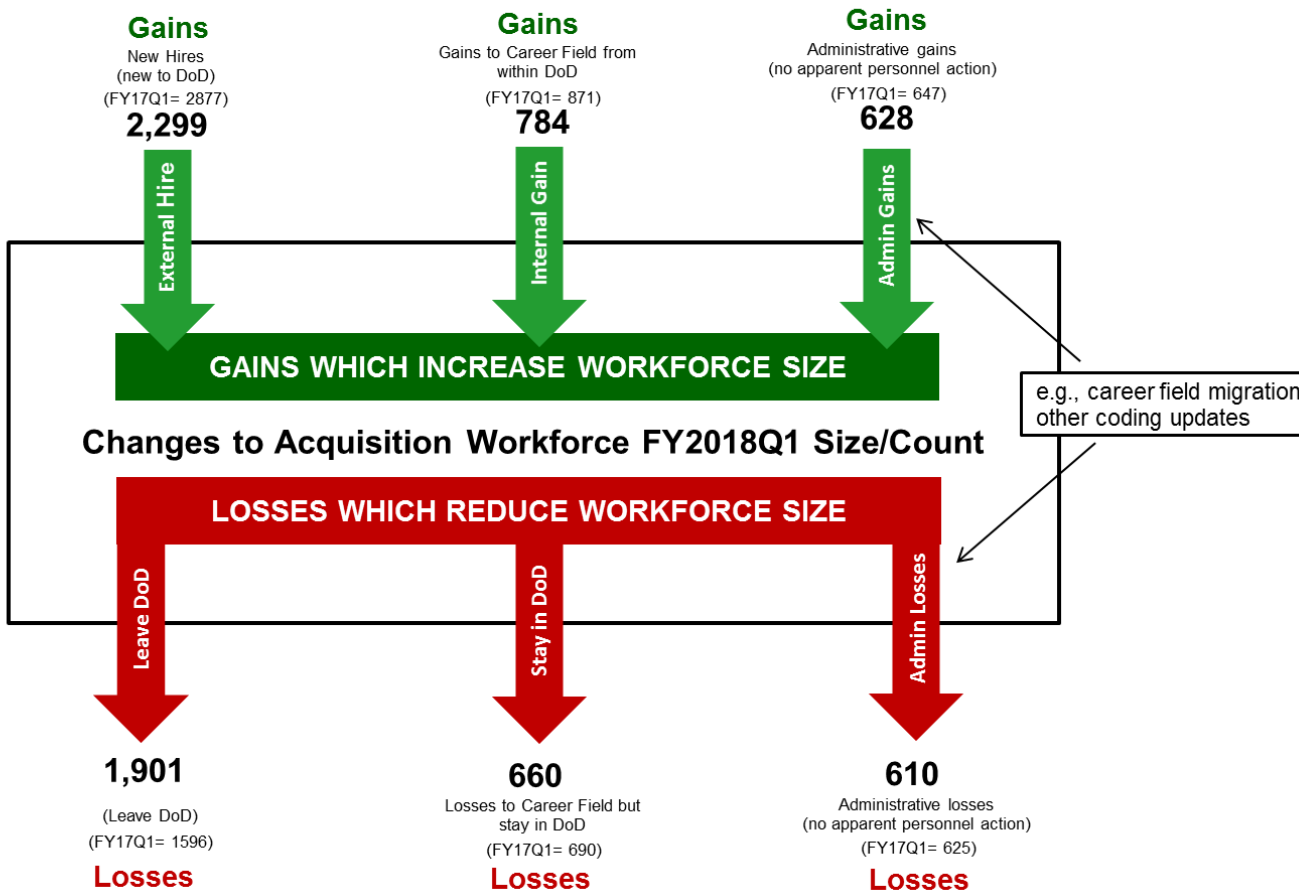


# Engineering Gains/Losses – New Hires Internal/External, Administrative



## Defense Acquisition Workforce (Civilian) (FY2018Q1) - Engineering

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

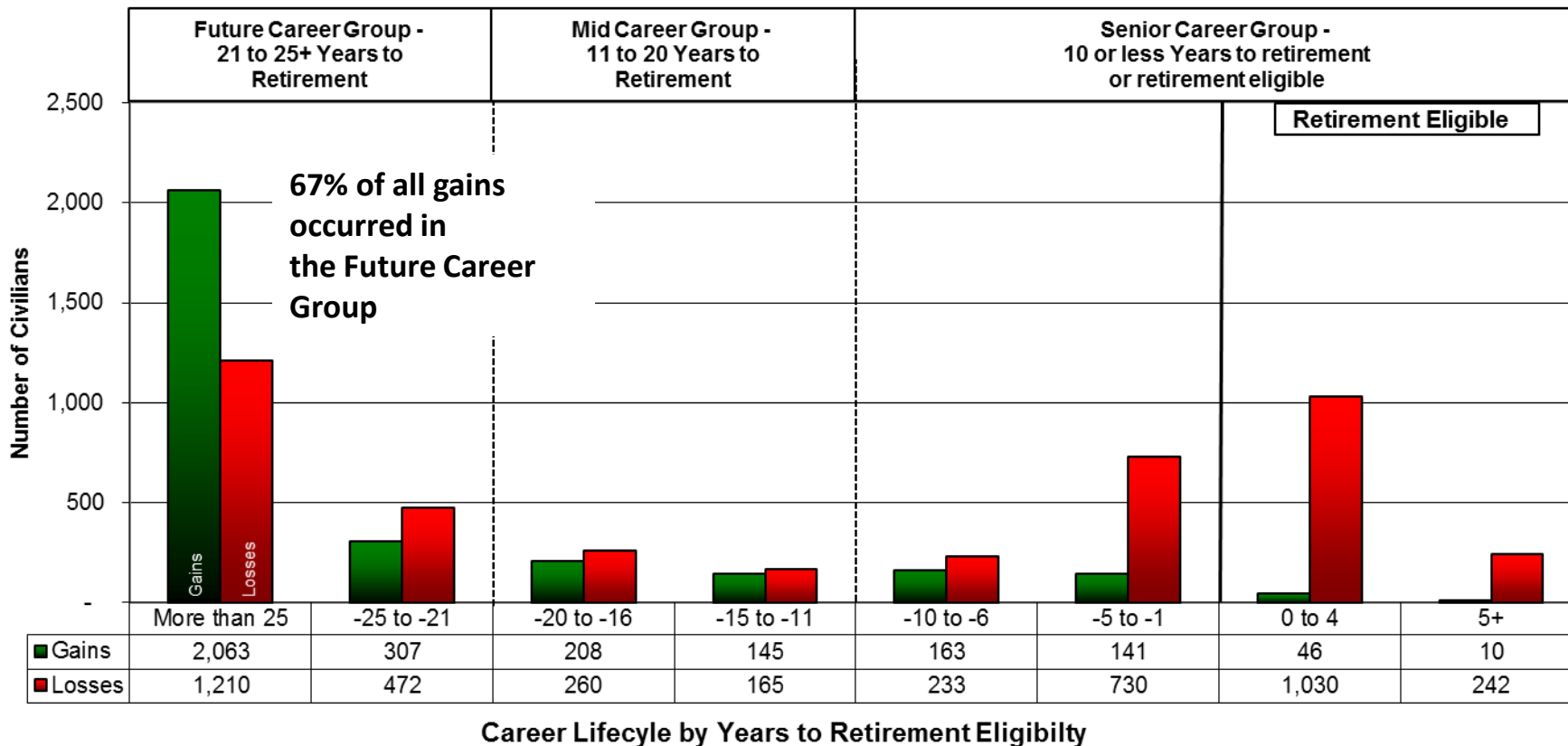




# Engineering Gains and Losses by YRE Groups

## Defense Acquisition Workforce (Civilian) - Engineering

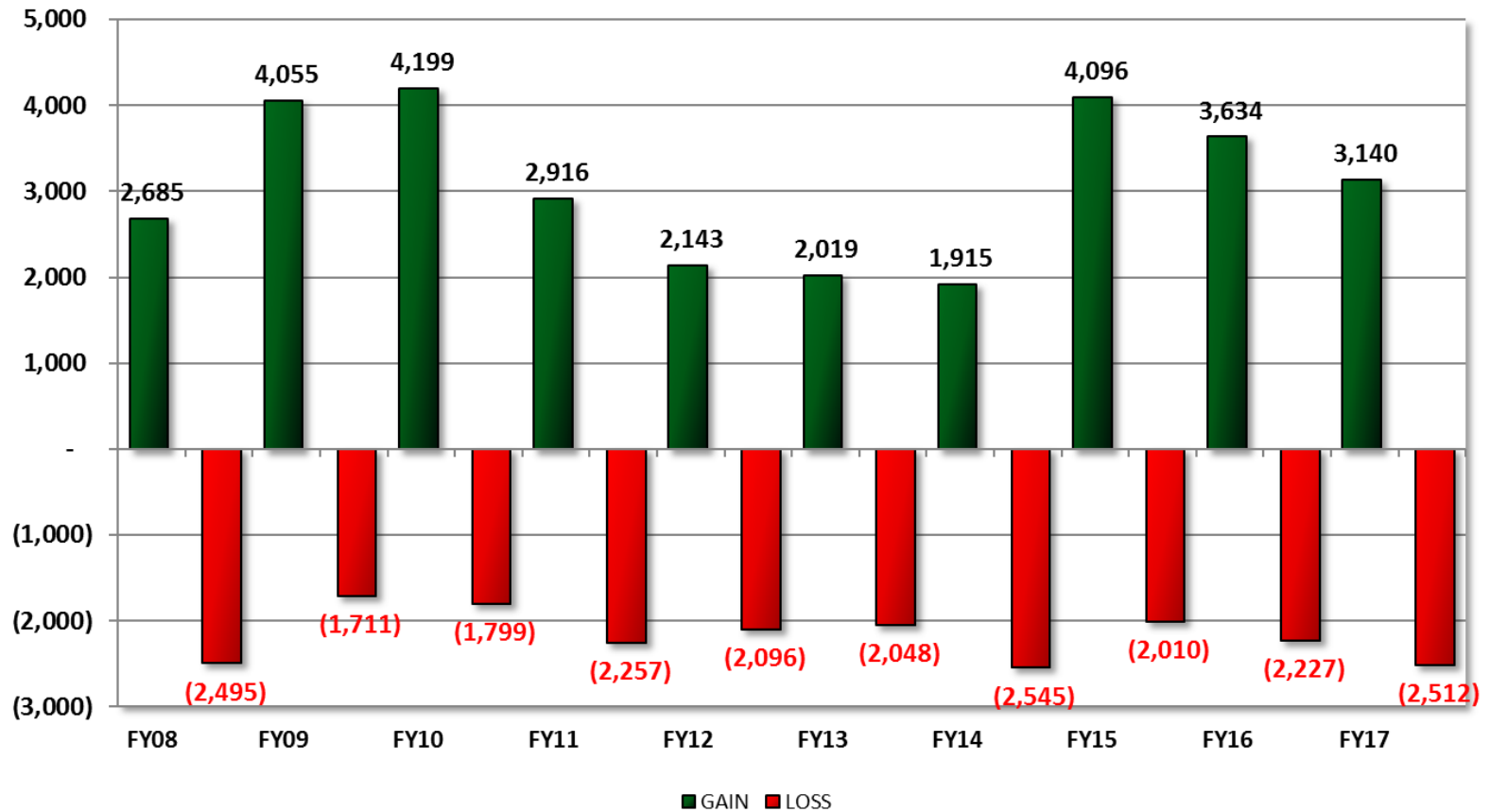
Workforce Lifecycle FY2018Q1 Gains & Losses\*



\*Does not include administrative gains and losses



# Engineering Historical Gains and Losses FY08 – FY17



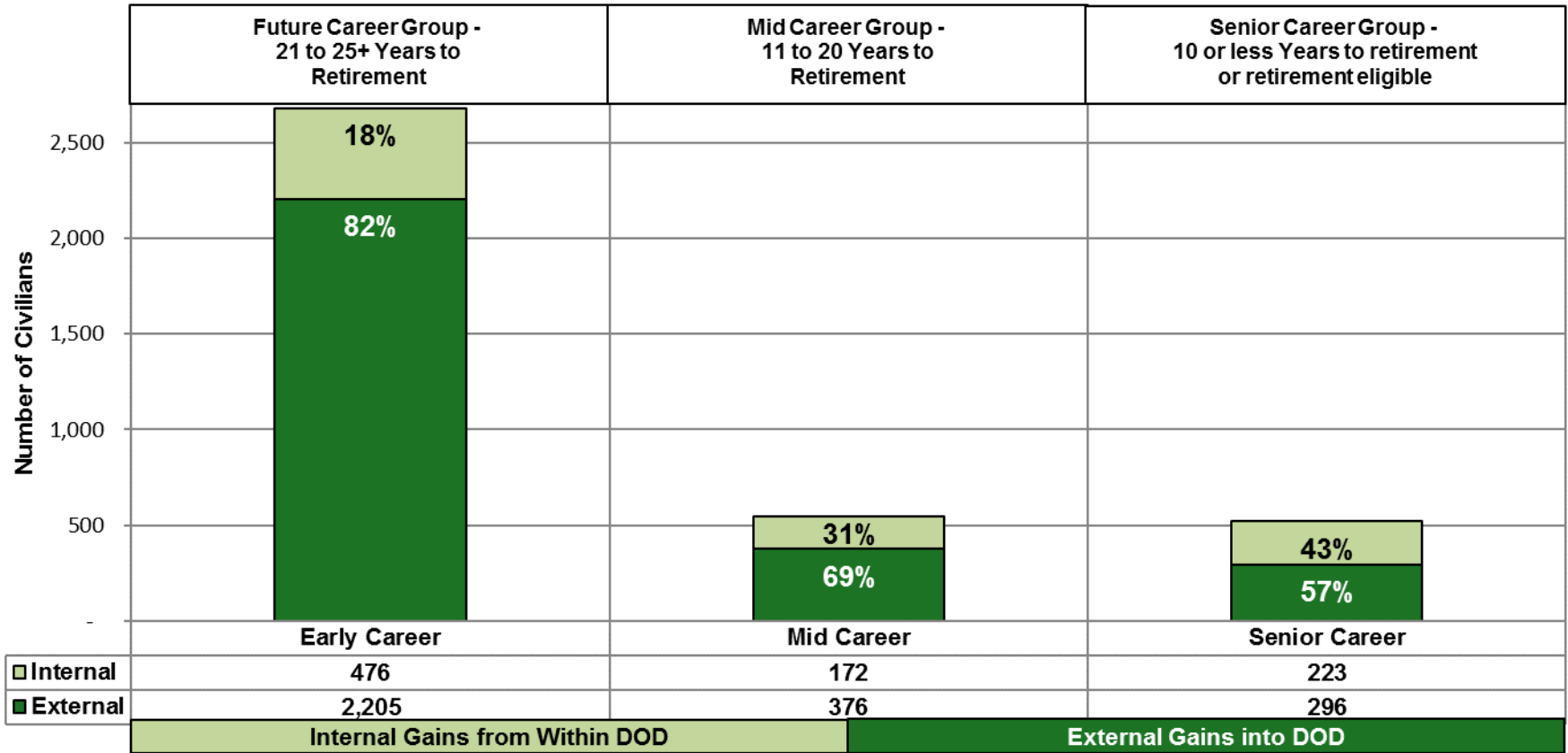
As 30 Sep 2017



# Engineering Internal/External Gains % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering Workforce Lifecycle FY2018Q1 Gains\*



\*Does not include administrative gains

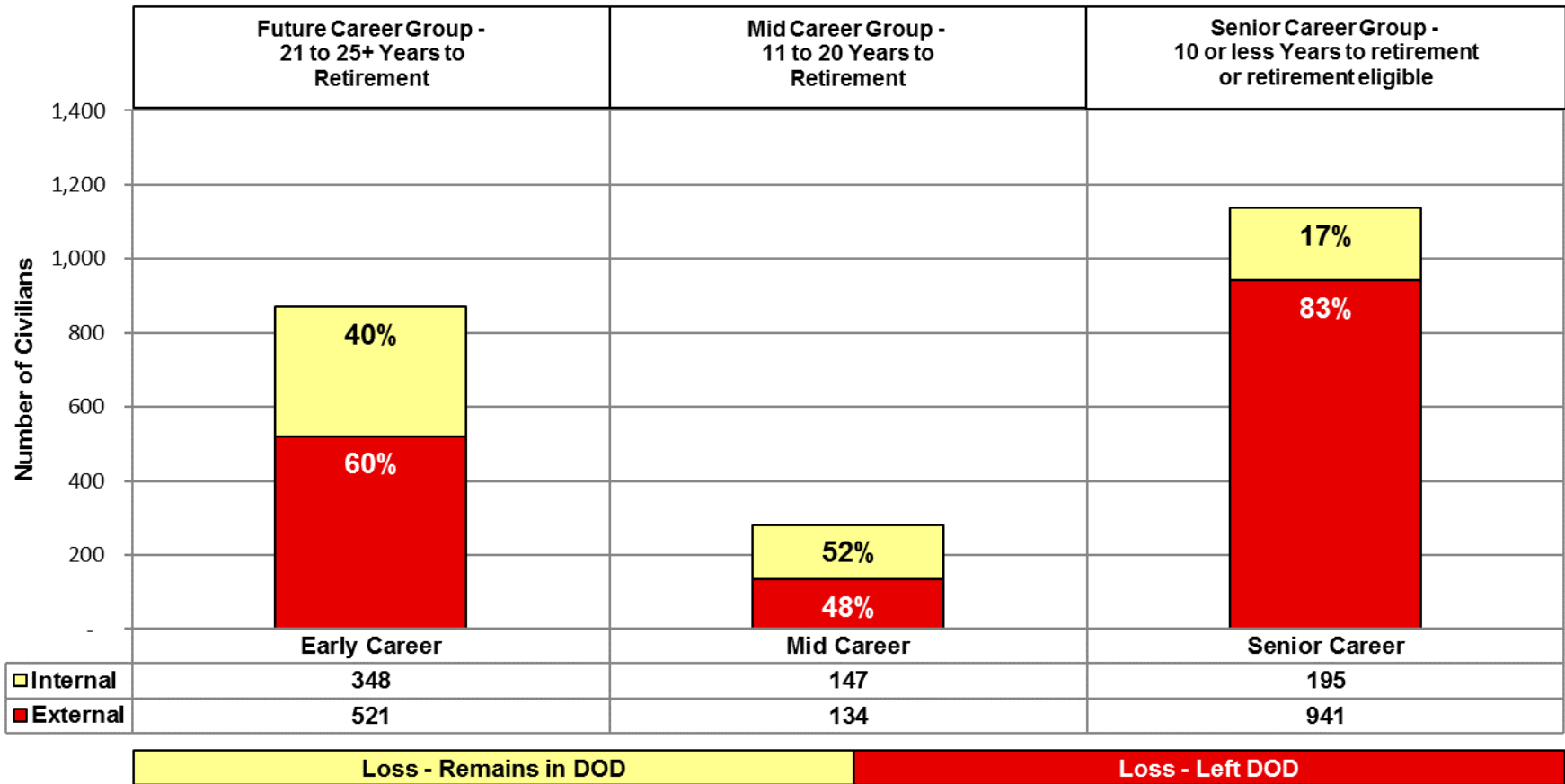


# Engineering Internal/External Loss % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering

### Workforce Lifecycle FY2018Q1 Losses\*

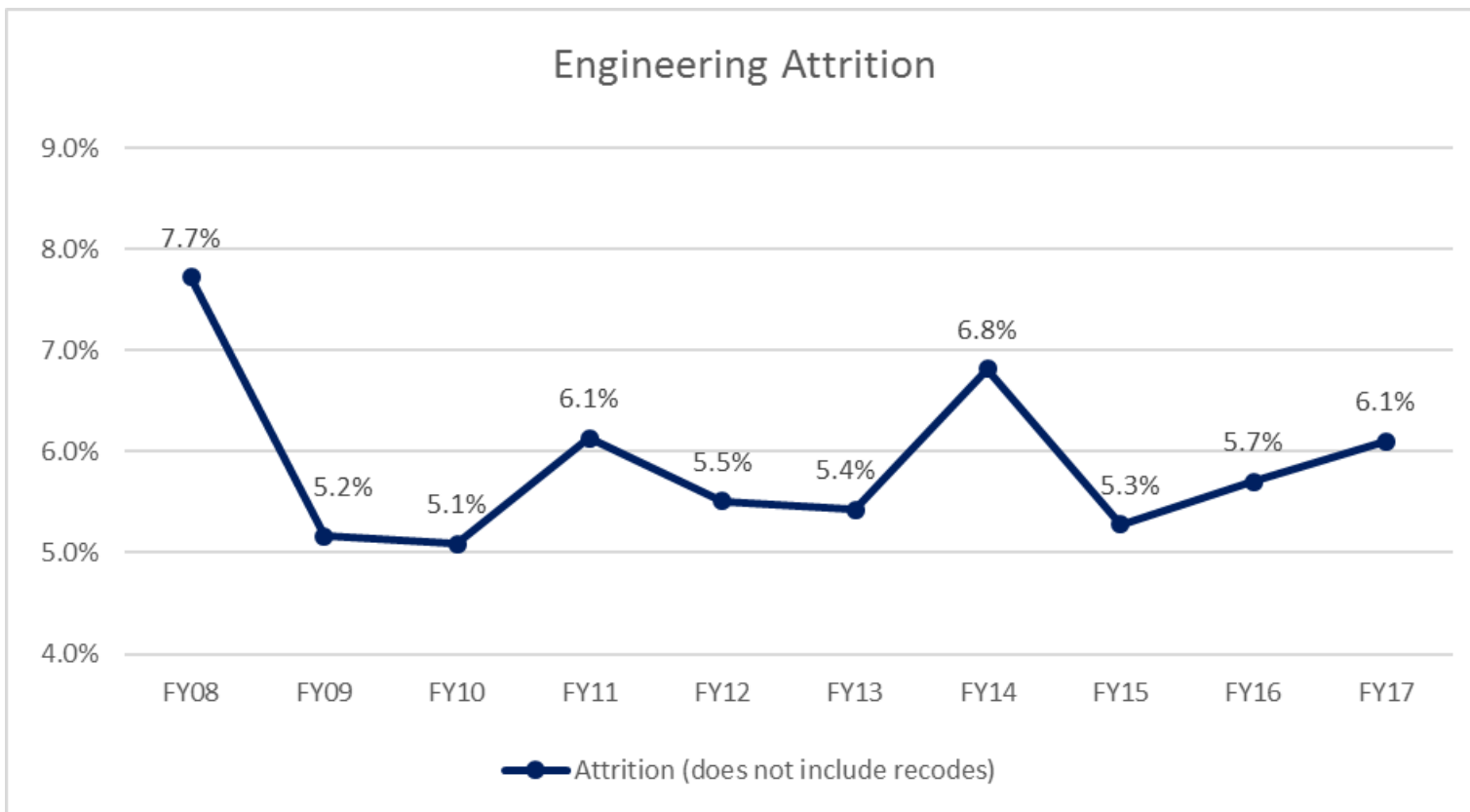


\*Does not include administrative losses





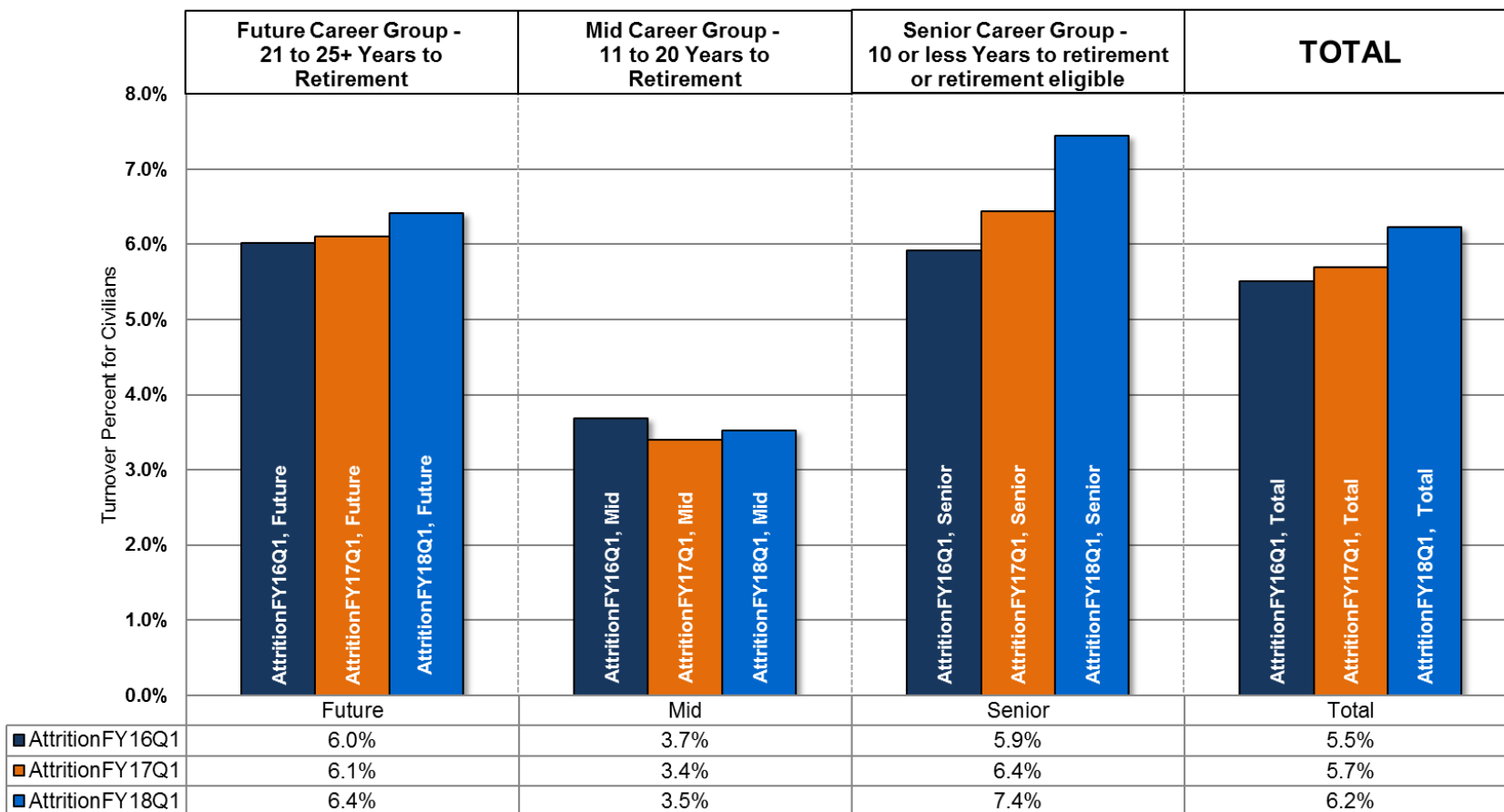
# Attrition Rates by FY/Quarter





# Engineering Attrition Rates by Career Group

## Defense Acquisition Workforce Attrition - Engineering (Civilian) (FY16Q1, FY17Q1, FY18Q1)(by Career Lifecycle Group)



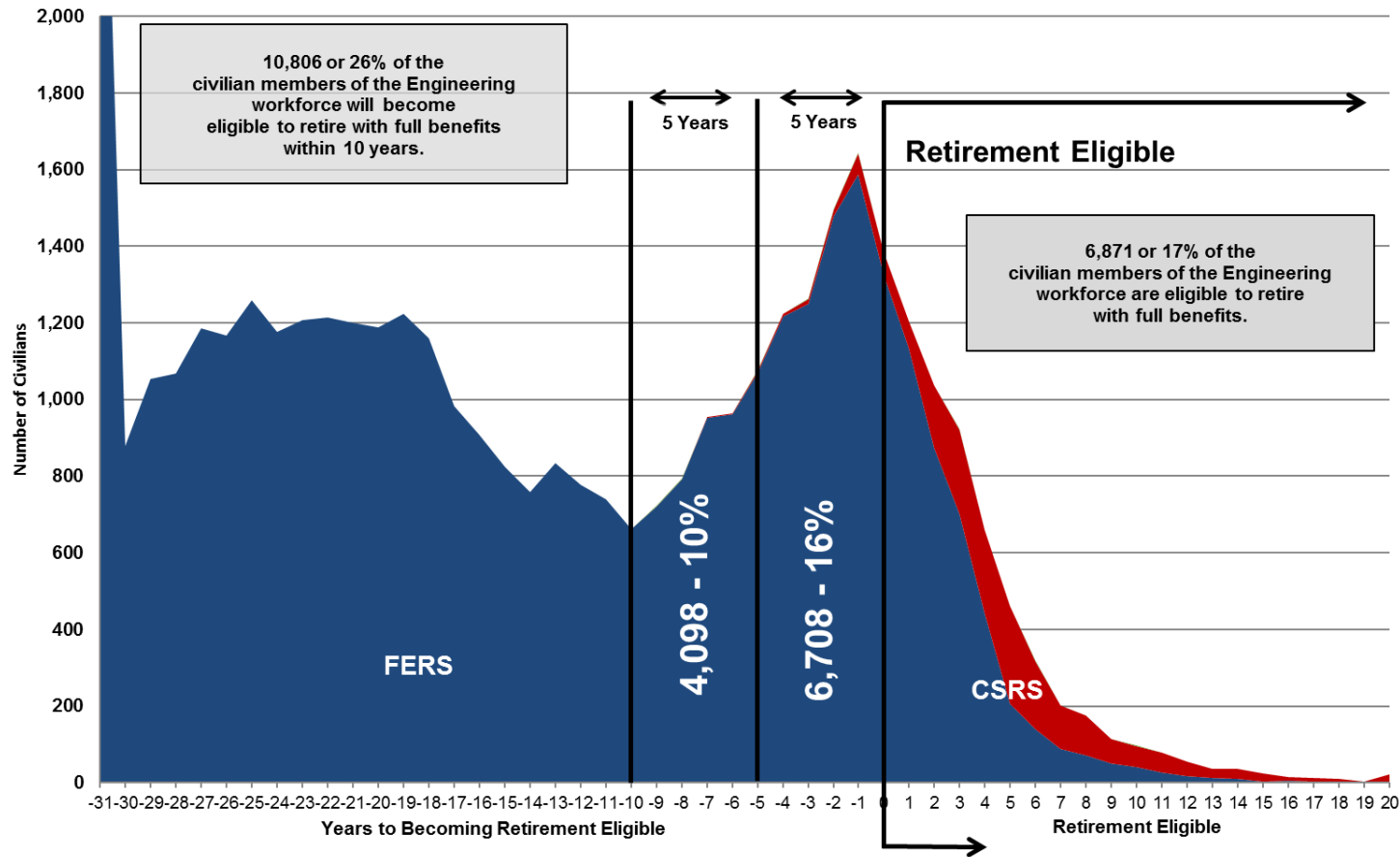


# Engineering Civilian Distribution by Years to Retirement Eligibility



## Defense Acquisition Workforce - Engineering

Distribution by Years to Retirement Eligibility (Civilians)(FY2017Q4)



As of 30 Sep 2017



***END***