



# Defense Acquisition Workforce Key Information

Engineering

As of FY17 (30 Sept 2017)



## *Slide Index*

<b><i>Slide Title</i></b>	<b><i>#</i></b>
Slide Index	2
Fact Sheet	3
Highlights	4
Total Workforce	5
AWF Size by Component and Career Field	6
Historical Size by Component	7-8
Historical DAWIA Certification	9-10
DAWIA Certification by Career Field	11
DAWIA Certification by Component	12
DAWIA Certification Matrix + Bench Strength	13
Demographics	14-15
RAND NDRI Forces and Resources Policy Center Gain/Loss and Retirement Information	16-27
End	28



# 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

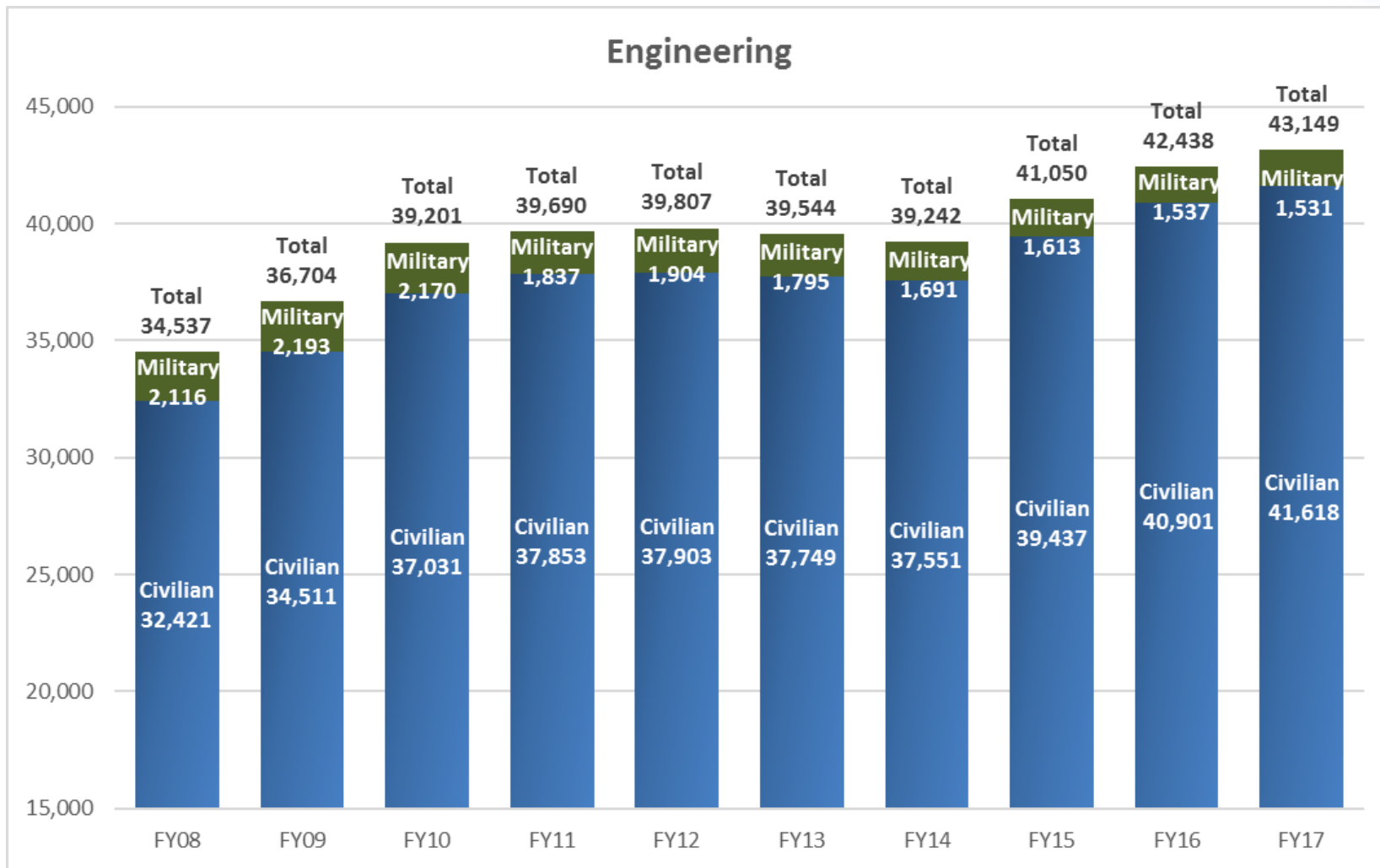
- The Engineering Defense Acquisition Workforce has seen a steady increase since FY14 growing from 39,242 to 43,149 at the end of FY17.
- Engineering continues to be the largest career field in the Acquisition Force accounting for 26% of the total force.
- Navy Engineering has grown 15% (2,874) since 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.

### 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.

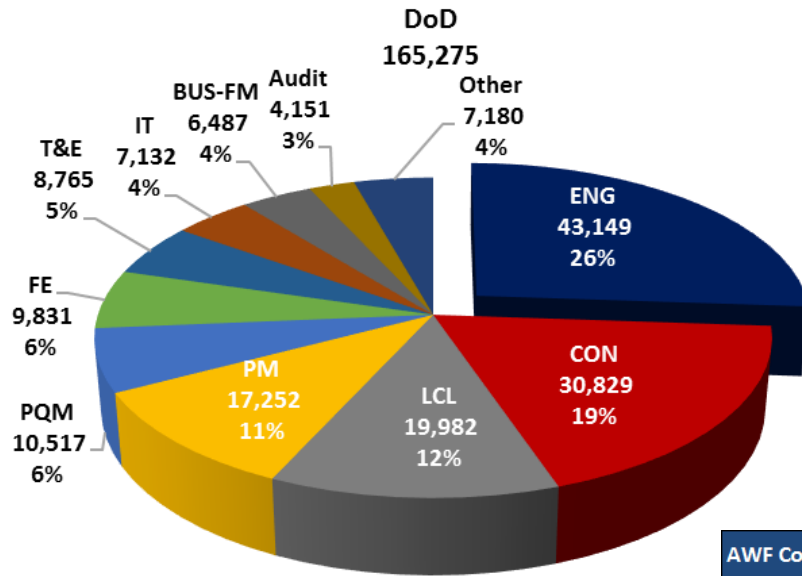


# Engineering Total Workforce





# AWF by Component and Career Field



AWF Count by Career Category FY17	Army	Navy	Marine Corps	Air Force	4th Estate	Totals	% Total
Auditing	-	-	-	-	4,151	4,151	2.5%
Business - CE	258	533	37	496	82	1,406	0.9%
Business - FM	1,714	1,978	171	2,094	530	6,487	3.9%
Contracting	7,978	5,906	537	8,445	7,963	30,829	18.7%
Engineering	9,096	22,297	341	9,276	2,139	43,149	26.1%
Facilities Engineering	3,581	5,541	30	591	88	9,831	5.9%
Information Technology	1,720	2,918	217	1,262	1,015	7,132	4.3%
Life Cycle Logistics	7,047	5,919	612	3,297	3,107	19,982	12.1%
Production, Quality and Man	1,387	3,330	40	421	5,339	10,517	6.4%
Program Management	3,313	5,450	763	5,885	1,841	17,252	10.4%
Property	49	70	-	16	266	401	0.2%
Purchasing	409	407	50	62	542	1,470	0.9%
S&T Manager	463	495	4	2,806	119	3,887	2.4%
Test and Evaluation	1,877	3,227	129	3,153	379	8,765	5.3%
Unknown/Other	8	1	-	1	6	16	0.01%
<b>FY17 Totals (as of 9-30-2017)</b>	<b>38,900</b>	<b>58,072</b>	<b>2,931</b>	<b>37,805</b>	<b>27,567</b>	<b>165,275</b>	
<b>Component %</b>	<b>23.5%</b>	<b>35.1%</b>	<b>1.8%</b>	<b>22.9%</b>	<b>16.7%</b>		



# Engineering Workforce Historical Size by Agency FY08 – FY17



Engineering Defense Acq Workforce Agency	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	% Change Since FY08	% Change Since FY16
Navy	16,353	17,810	18,932	18,924	19,121	19,183	19,423	20,816	21,623	22,297	36%	3%
MARINE CORPS	223	275	338	401	377	405	374	365	354	341	53%	-4%
ARMY	10,769	10,208	10,644	10,108	9,810	9,419	8,981	8,986	9,140	9,096	-16%	0%
AIR FORCE	6,429	7,197	7,625	8,514	8,649	8,521	8,473	8,903	9,139	9,276	44%	1%
DCMA	282	660	813	917	974	1,134	1,157	1,181	1,271	1,229	336%	-3%
DLA	19	16	16	15	11	12	11	11	13	14	-26%	8%
MDA	281	363	623	615	644	631	605	582	601	603	115%	0%
DISA	89	74	58	69	69	76	74	70	70	66	-26%	-6%
DTRA	7	11	27	17	35	45	44	43	47	35	400%	-26%
DHA	2	8	9	9	10	8	6	2	4	8	300%	100%
DAU	33	41	46	48	49	45	40	38	45	43	30%	-4%
NRO	-	-	-	-	-	-	-	-	66	78		18%
OSD	31	19	25	24	21	29	23	24	22	22	-29%	0%
DeCA	-	-	-	-	-	-	-	-	3	3		0%
JCS	-	-	-	-	12	12	10	8	7	6		-14%
DMEA	-	-	29	26	23	23	20	20	32	31		-3%
TRMC	-	-	-	-	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	-	-	-	-	-	-	-		
<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>↑ 25%</b>	<b>↑ 2%</b>



# Engineering Workforce Historical Size (Quarterly) by Agency FY16Q1 – FY17Q4



Engineering Defense Acq Workforce Agency	FY16Q1	FY16Q2	FY16Q3	FY16Q4	FY17Q1	FY17Q2	FY17Q3	FY17Q4	% Change Since FY16Q4
Navy	20,811	20,887	21,196	21,623	21,652	21,668	21,777	22,297	3%
ARMY	9,079	9,063	9,061	9,140	9,145	9,122	9,008	9,096	0%
AIR FORCE	8,795	8,949	8,686	9,139	9,126	9,221	9,211	9,276	1%
MARINE CORPS	363	356	353	354	355	353	357	341	-4%
DCMA	1,181	1,206	1,221	1,271	1,275	1,262	1,239	1,229	-3%
DLA	13	13	12	13	13	12	13	14	8%
MDA	577	583	588	601	600	597	605	603	0%
DISA	67	67	64	70	73	73	72	66	-6%
DTRA	42	43	46	47	43	42	39	35	-26%
DHA	2	4	4	4	4	4	6	8	100%
DAU	37	42	46	45	44	44	46	43	-4%
NRO	-	57	60	66	68	72	75	78	18%
OSD	23	23	22	22	22	22	23	22	0%
DeCA	-	-	1	3	3	2	1	3	0%
JCS	8	8	8	7	7	7	7	6	-14%
DMEA	20	23	30	32	31	31	31	31	-3%
TRMC	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>↑ 2%</b>

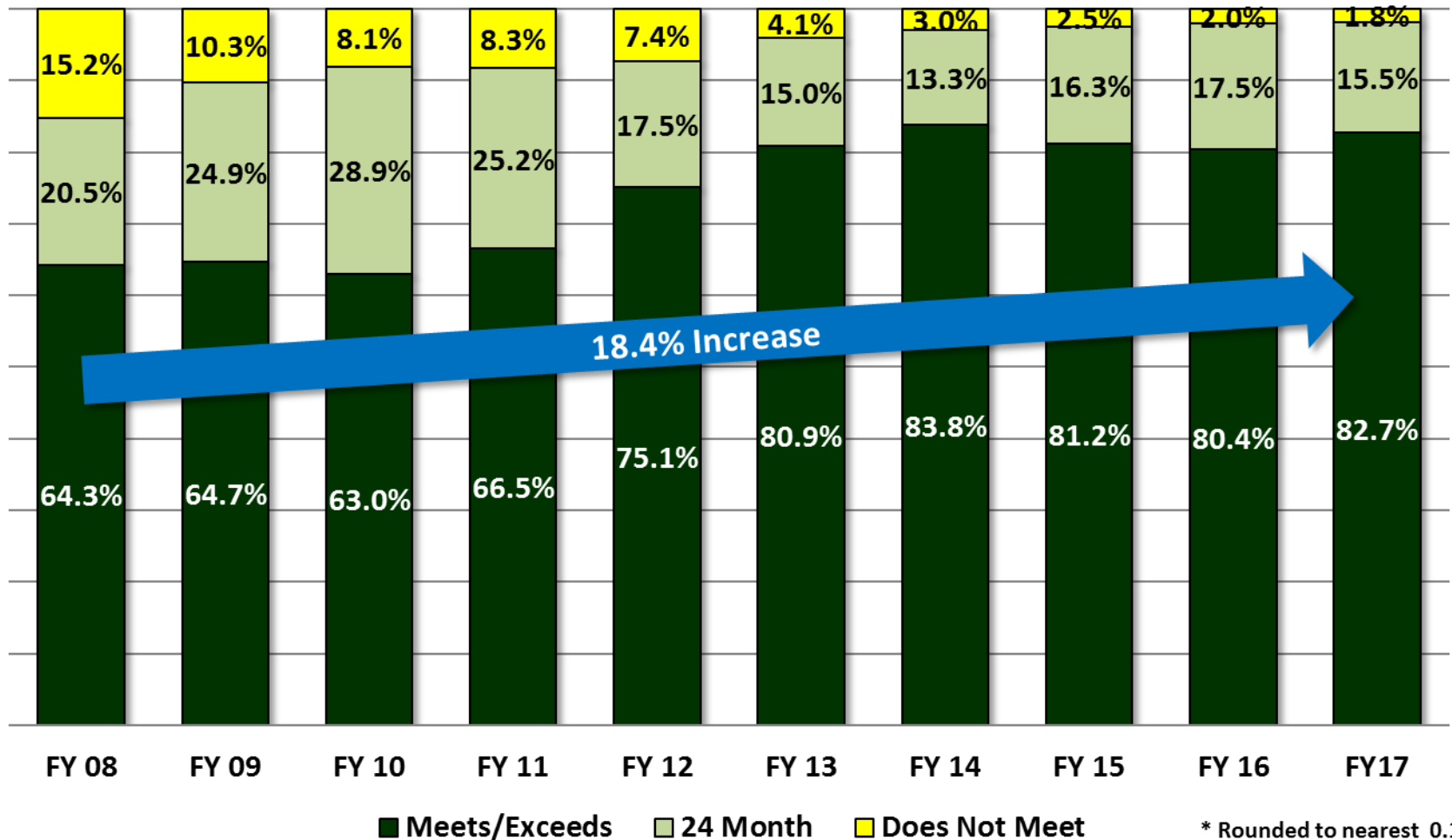




# Engineering Manager Historical DAWIA Certification FY08 – FY17



## Engineering



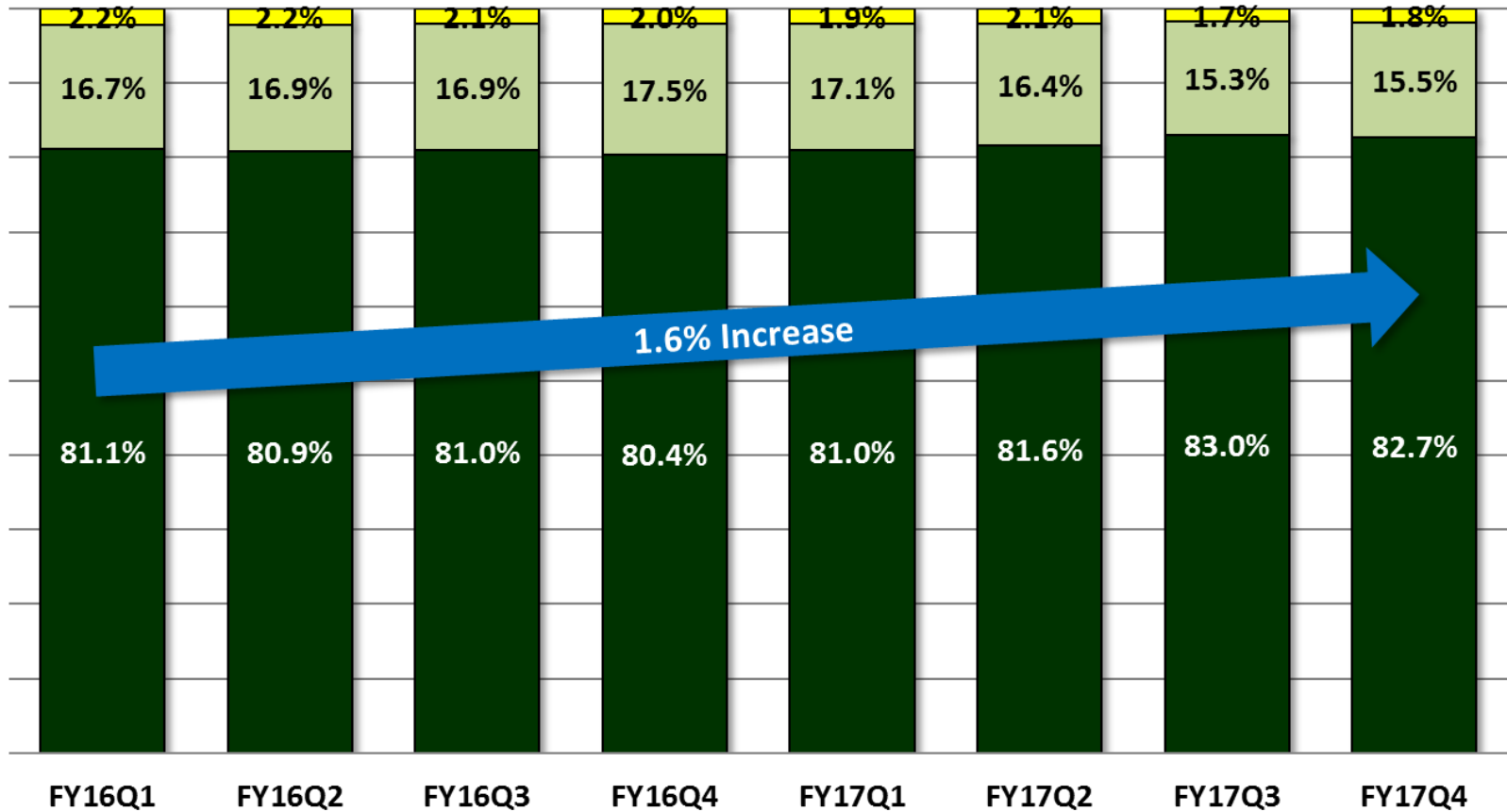
18.4% Increase



# Engineering Manager Historical (Quarterly) DAWIA Certification FY16Q1 – FY17Q4



## Engineering



■ Meets/Exceeds   ■ 24 Month   ■ Does Not Meet

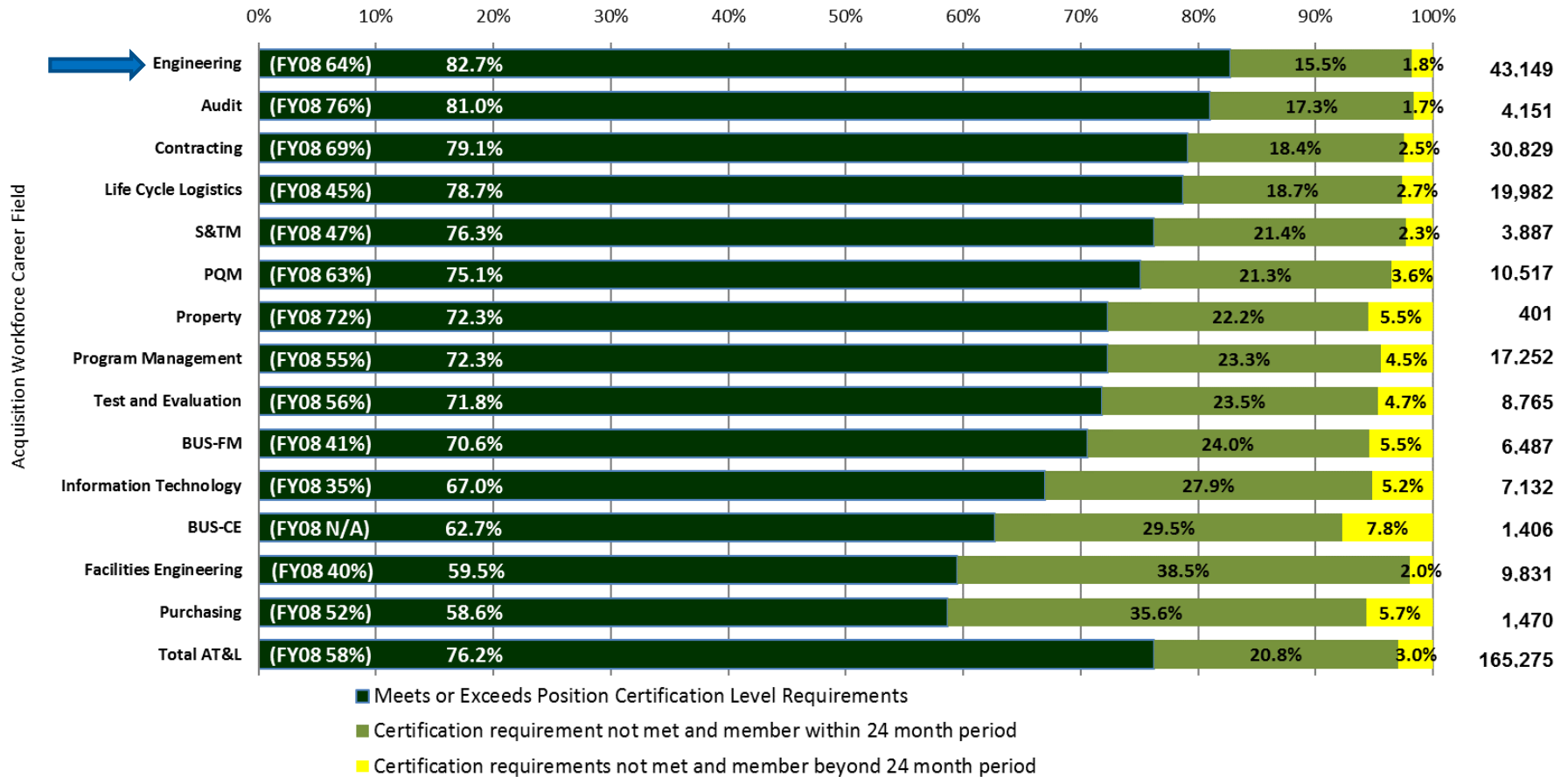
\* Rounded to nearest 0.1%



# DAWIA Certification by Career Field



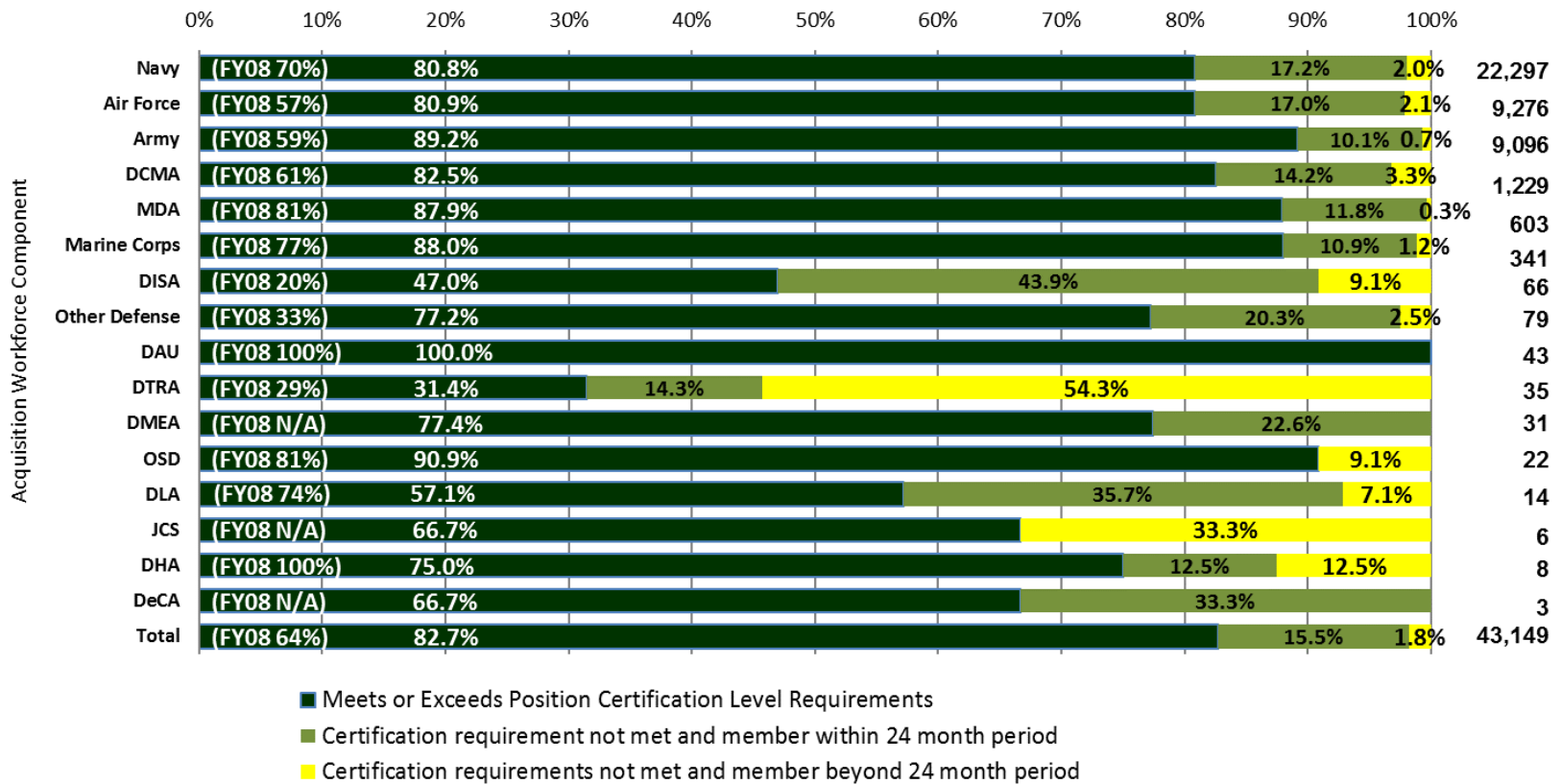
## Certification Level "Meet/Exceed" Rates by Career Field AT&L (FY17Q4)





# Engineering DAWIA Certification by Component

## Certification Level "Meet/Exceed" Rates by Component Engineering (FY17Q4)





# Engineering DAWIA Certification Matrix + Bench Strength

Engineering		Achieved Certification Level				FY17 TOTAL	% Meets Certification Requirement
Required Certification Level	No Level Achieved	Level I	Level II	Level III			
Level I	2,664	4,134	1,568	1,779	10,145	73.7%	
Level II	1,554	1,949	6,845	7,511	17,859	80.4%	
Level III	491	263	536	13,851	15,141	91.5%	
<i>Unspecified</i>	3	-	-	1	4		
<b>FY17 TOTAL</b>	<b>4,712</b>	<b>6,346</b>	<b>8,949</b>	<b>23,142</b>	<b>43,149</b>	<b>82.7%</b>	
	10.9%	14.7%	20.7%	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	125,981	76.2%	
Army	31,265	80.4%	
Navy	44,158	76.1%	
Marine Cor	2,058	70.2%	
Air Force	27,102	71.7%	
4th Estate	21,398	77.6%	
<b>Engineering</b>	<b>35,688</b>	<b>82.7%</b>	<b>1 of 14</b>

\*\* Based on population total without unspecified positions

Certification Requirement	Meets	Within 24 Months	Does Not Meet	DAW TOTAL	
Level I	7,481	2,624	40	10,145	23.5%
Level II	14,356	3,002	501	17,859	41.4%
Level III	13,851	1,056	234	15,141	35.1%
<i>Unspecified</i>	1	3	-	4	0.0%
<b>Engineering TOTAL</b>	<b>35,689</b>	<b>6,685</b>	<b>775</b>	<b>43,149</b>	
	82.7%	15.5%	1.8%		

= Compliance

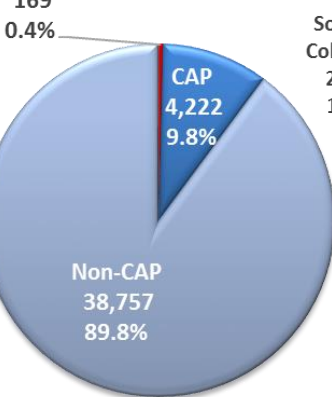
= Exceeds Requirements

\* NOTE: Rounded to nearest 0.1%

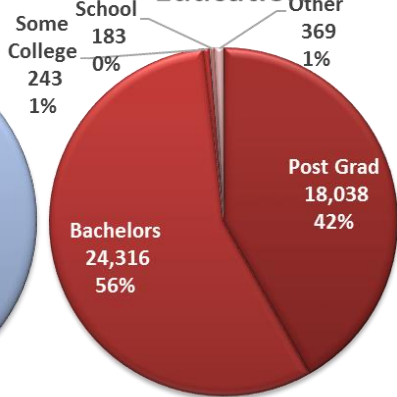


# Demographics

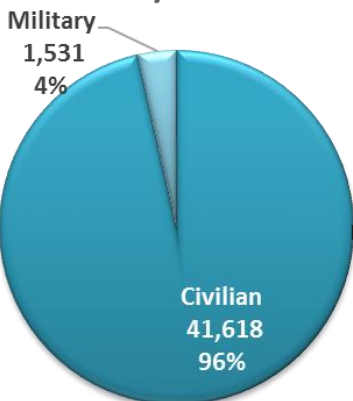
**CAP - KLP**



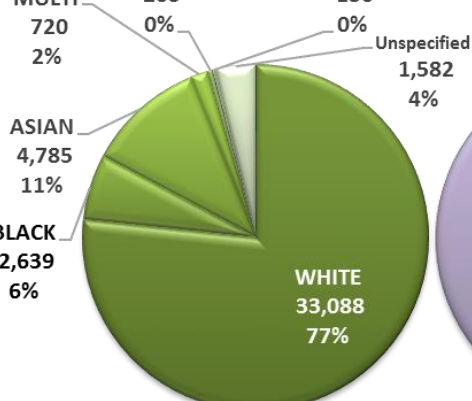
**Education**



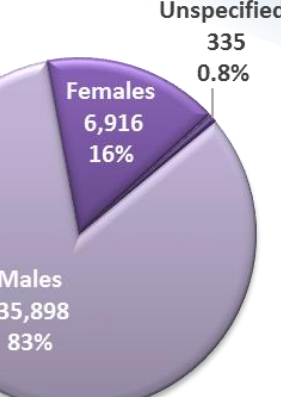
**MIL / CIV**



**RACE**



**Gender**



Occupied Position Type	Engineering	Entire DAW
Key Leadership Positions (KLPs)	169 <i>0.4%</i>	1,099 <i>0.7%</i>
Critical Acquisition Positions (CAPs) *	4,222 <i>9.8%</i>	16,317 <i>9.9%</i>
Non-CAP Positions	38,757 <i>89.8%</i>	147,679 <i>89.4%</i>
Unknown	1 <i>0.0%</i>	180 <i>0.1%</i>
<b>TOTAL</b>	<b>43,149</b>	<b>165,275</b>

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

Highest Level of Education	Engineering	Entire DAW
Post Grad	18,038 <i>41.8%</i>	66,150 <i>40.0%</i>
Bachelors	24,316 <i>56.4%</i>	72,902 <i>44.1%</i>
Some College	243 <i>0.6%</i>	11,798 <i>7.1%</i>
High School	183 <i>0.4%</i>	12,412 <i>7.5%</i>
Other	369 <i>0.9%</i>	2,013 <i>1.2%</i>
<b>TOTAL</b>	<b>43,149</b>	<b>165,275</b>

Military / Civilian	Engineering	Entire DAW
Civilian	41,618 <i>96.5%</i>	149,782 <i>90.6%</i>
Military	1,531 <i>3.5%</i>	15,493 <i>9.4%</i>
<b>TOTAL</b>	<b>43,149</b>	<b>165,275</b>

Race	Engineering	Entire DAW
WHITE	33,088 <i>25452.3%</i>	4,110 <i>2.5%</i>
BLACK	2,639 <i>2030.0%</i>	947 <i>0.6%</i>
ASIAN	4,785 <i>3680.8%</i>	823 <i>0.5%</i>
MULTI	720 <i>553.8%</i>	6,700 <i>4.1%</i>
AMI/AN	205 <i>157.7%</i>	- <i>0.0%</i>
PI	130 <i>100.0%</i>	165,275 <i>100.0%</i>
Unspecified	1,582 <i>1216.9%</i>	- <i>0.0%</i>
<b>TOTAL</b>	<b>43,149</b>	<b>177,855</b>

Gender	Engineering	Entire DAW
Males	35,898 <i>519.1%</i>	- <i>0.0%</i>
Females	6,916 <i>100.0%</i>	165,275 <i>100.0%</i>
Unspecified	335 <i>4.8%</i>	- <i>0.0%</i>
<b>TOTAL</b>	<b>43,149</b>	<b>165,275</b>



# Engineering Size by Occupational Series

Civilian Occupational Series	Engineering	
0855 - Engineer, Electronics	10,677	25.7%
0801 - Engineer, General	8,336	20.0%
0830 - Engineer, Mechanical	6,526	15.7%
1550 - Computer Scientist	3,905	9.38%
0861 - Engineer, Aerospace	2,921	7.02%
0854 - Engineer, Computers	2,667	6.41%
0850 - Engineer, Electrical	1,635	3.93%
1515 - Operations Research Analyst	645	1.55%
1310 - Physicist	608	1.46%
0893 - Engineer, Chemical	497	1.19%
1520 - Mathematician	489	1.17%
0896 - Engineer, Industrial	409	0.98%
0871 - Architect, Naval	391	0.94%
0806 - Engineer, Materials	338	0.81%
1320 - Chemist	292	0.70%
<i>Other</i>	1,282	3.08%
<b>TOTAL CIVILIAN</b>	<b>41,618</b>	<b>Civilians</b>

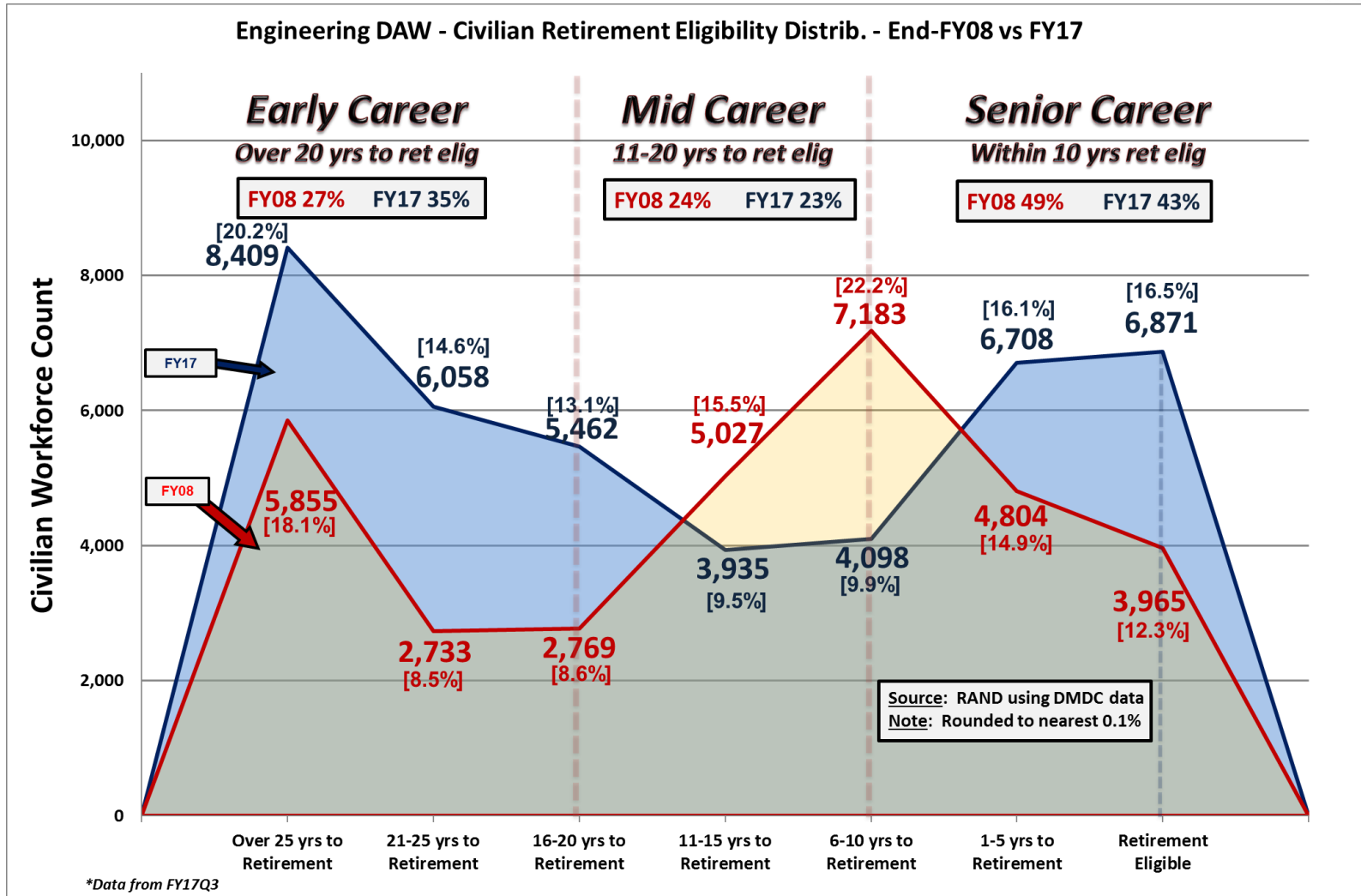


# **RAND NDRI Forces and Resources Policy Center Data Retirement / Loss Slides**



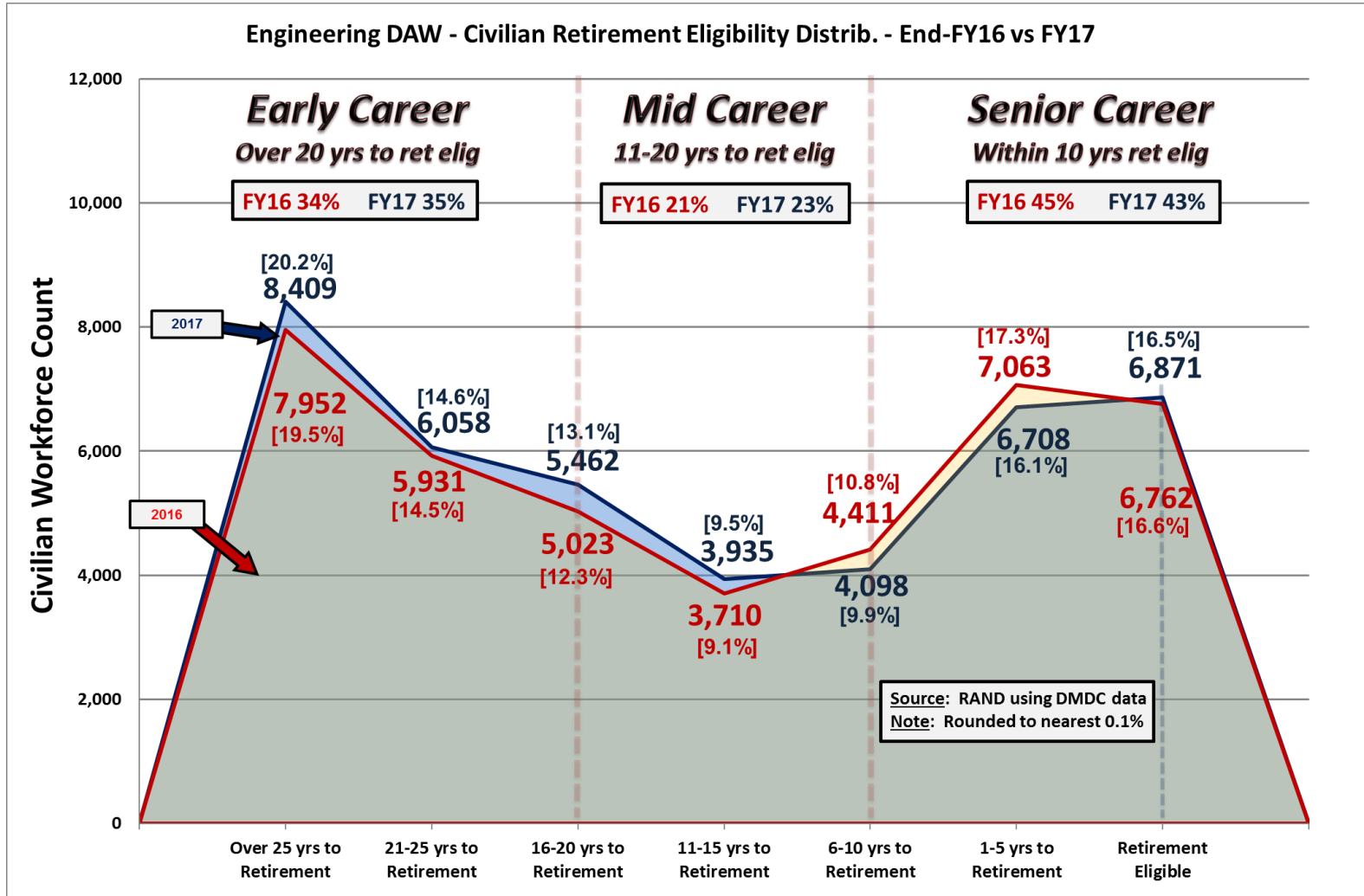


# Engineering Civilian Retirement Eligibility Distribution – FY08 / FY17





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

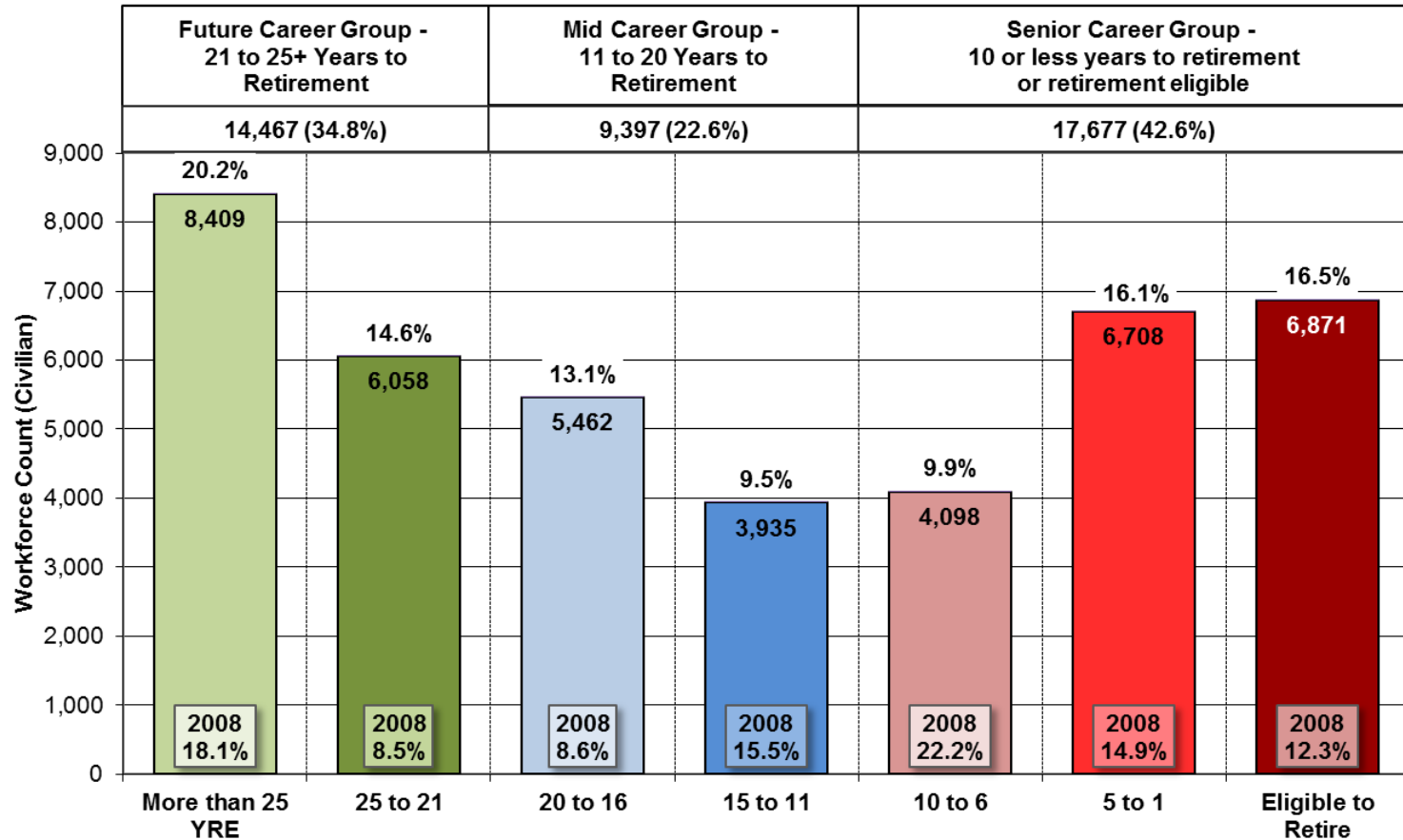


As of 30 Sep 2017



# Engineering Workforce Lifecycle Model by YRE

**Defense Acquisition Workforce Lifecycle Model (WLM)**  
by Years to Retirement Eligibility (YRE) - Civilian (FY2017Q4) - Engineering



Source: Chart was generated by OUSD(AT&L)/Human Capital Initiatives using FY2008 and FY2017 (Q4) DMDC data provided by RAND.

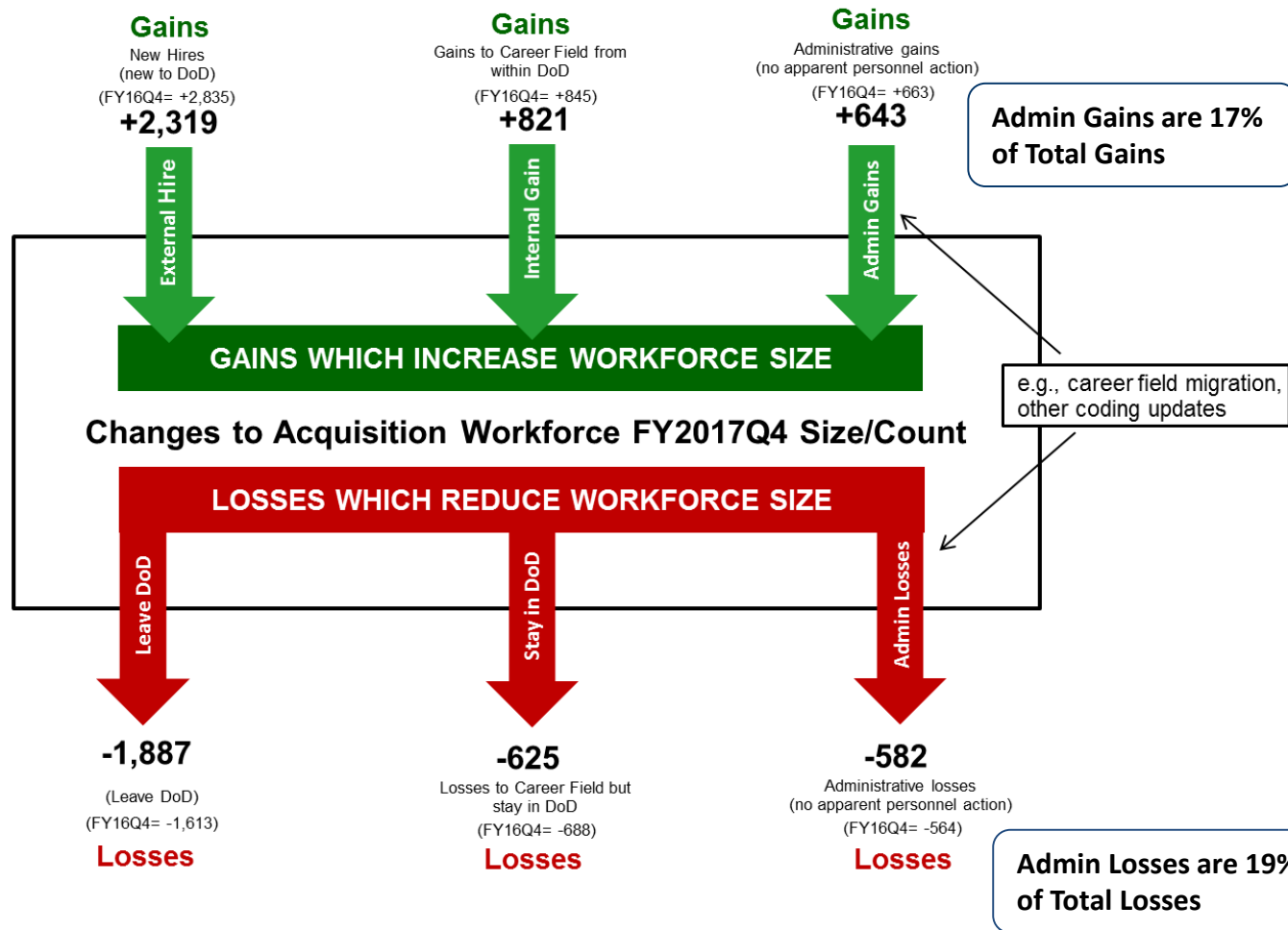


# Engineering Gains/Losses – New Hires Internal/External, Administrative



## Defense Acquisition Workforce (Civilian) (FY2017Q4) - Engineering

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



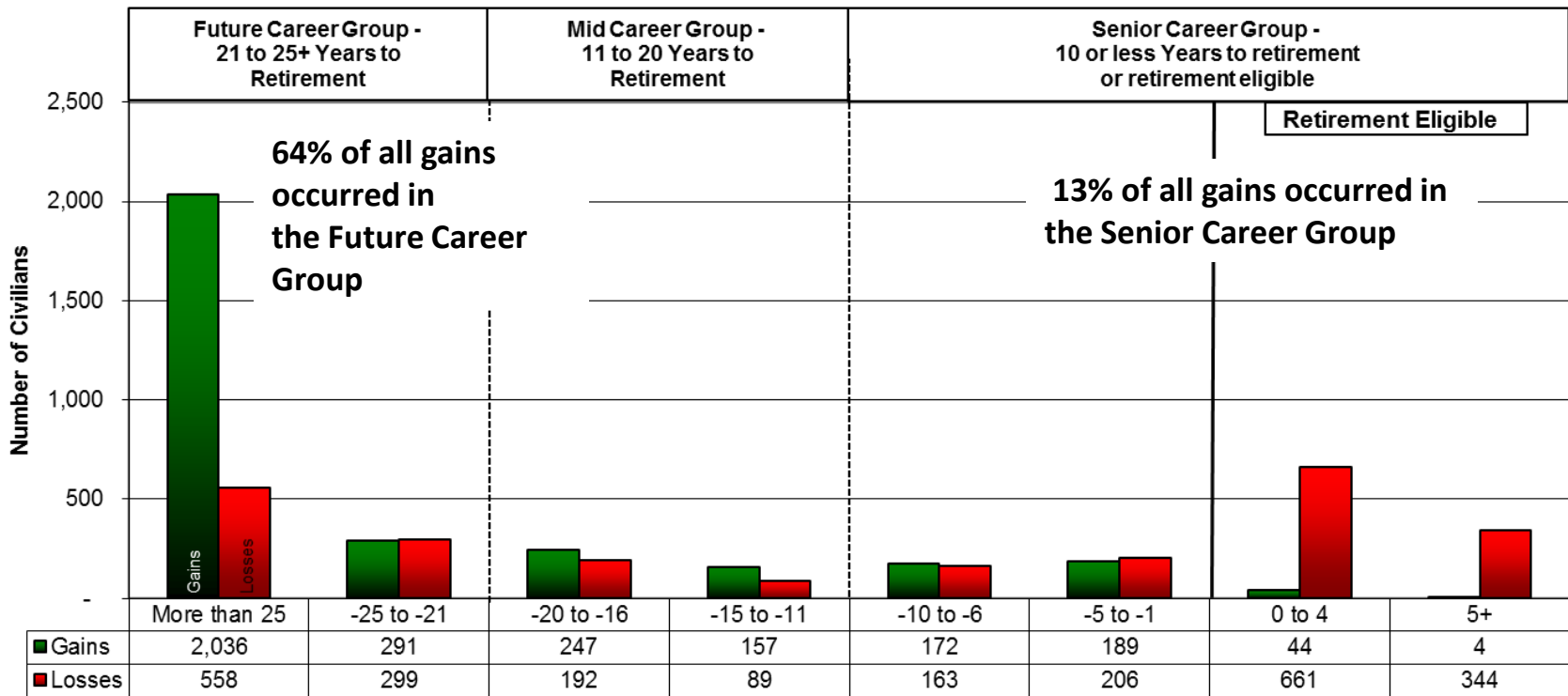
As of 30 Sep 2017



# Engineering Gains and Losses by YRE Groups

## Defense Acquisition Workforce (Civilian) - Engineering

Workforce Lifecycle FY2017Q4 Gains & Losses\*



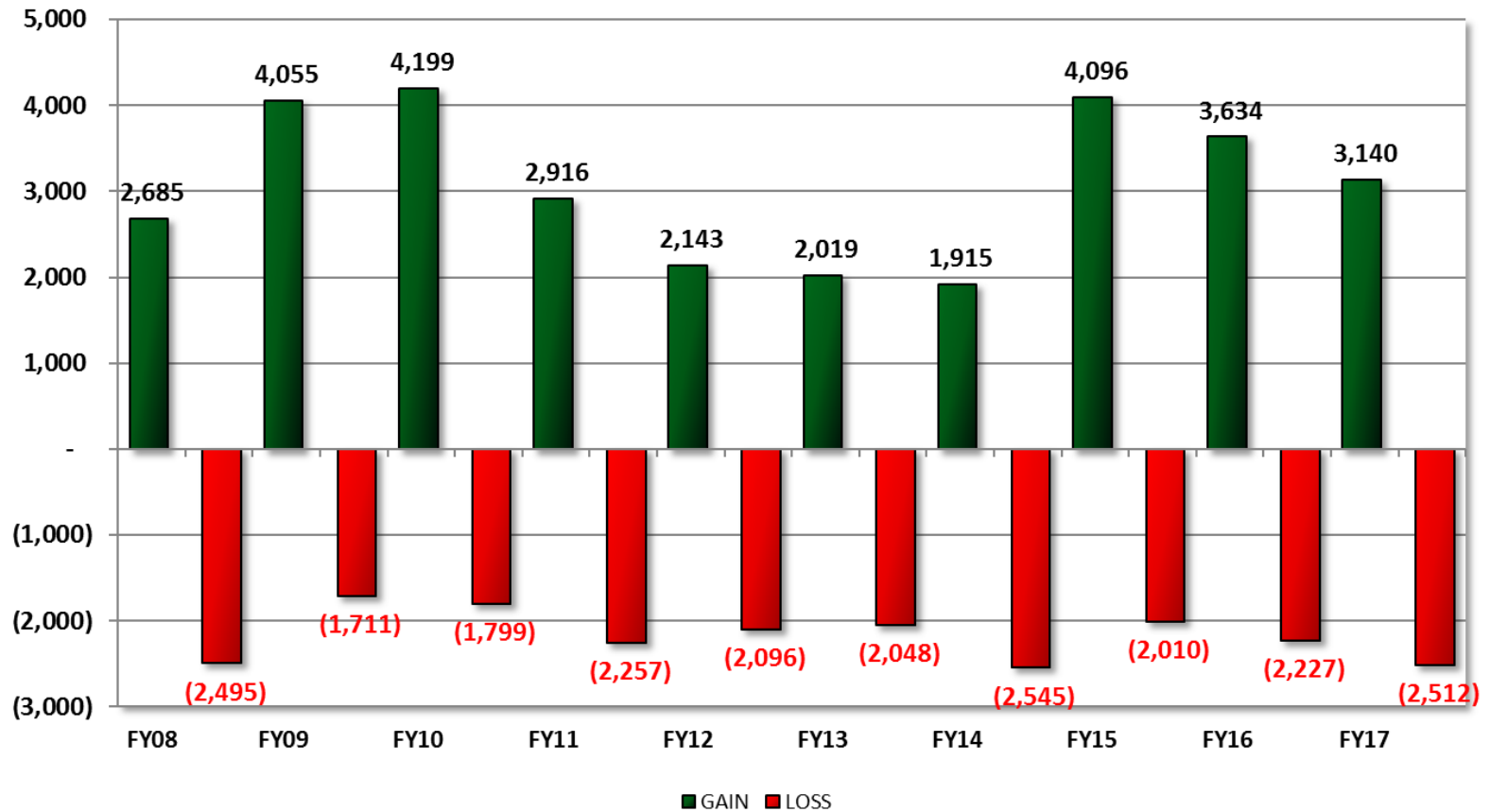
Career Lifecycle by Years to Retirement Eligibility

Source: RAND NDRI Forces and Resources Policy Center analysis using DMDC data (FY2017Q4 and Previous FY Data)

\*Does not include administrative gains and losses



# Engineering Historical Gains and Losses FY08 – FY17



As 30 Sep 2017

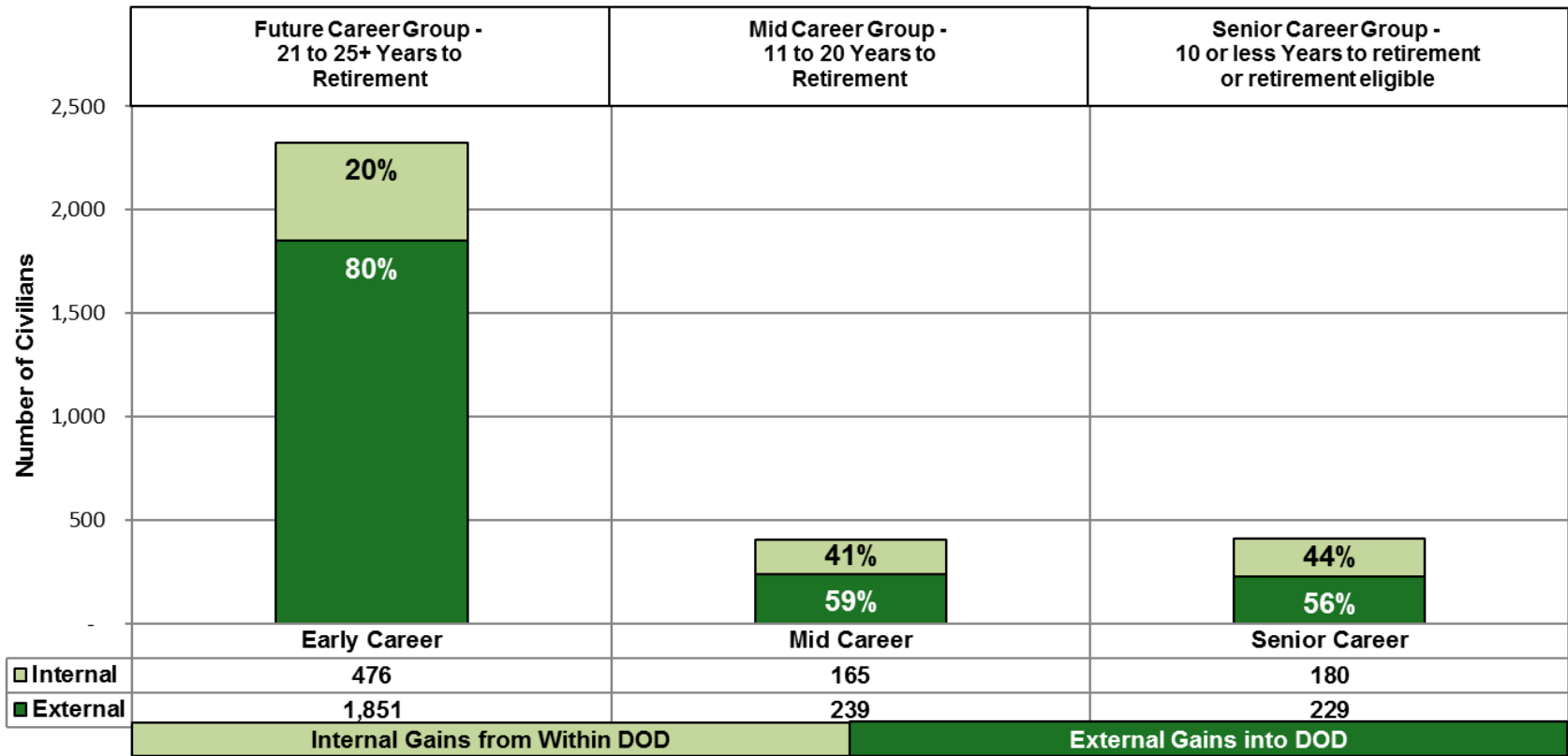


# Engineering Internal/External Gains % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering

Workforce Lifecycle FY2017Q4 Gains\*



\*Does not include administrative gains

Source: RAND NDRI Forces and Resources Policy Center analysis using DMDC data (FY2017Q4 and Previous FY Data)

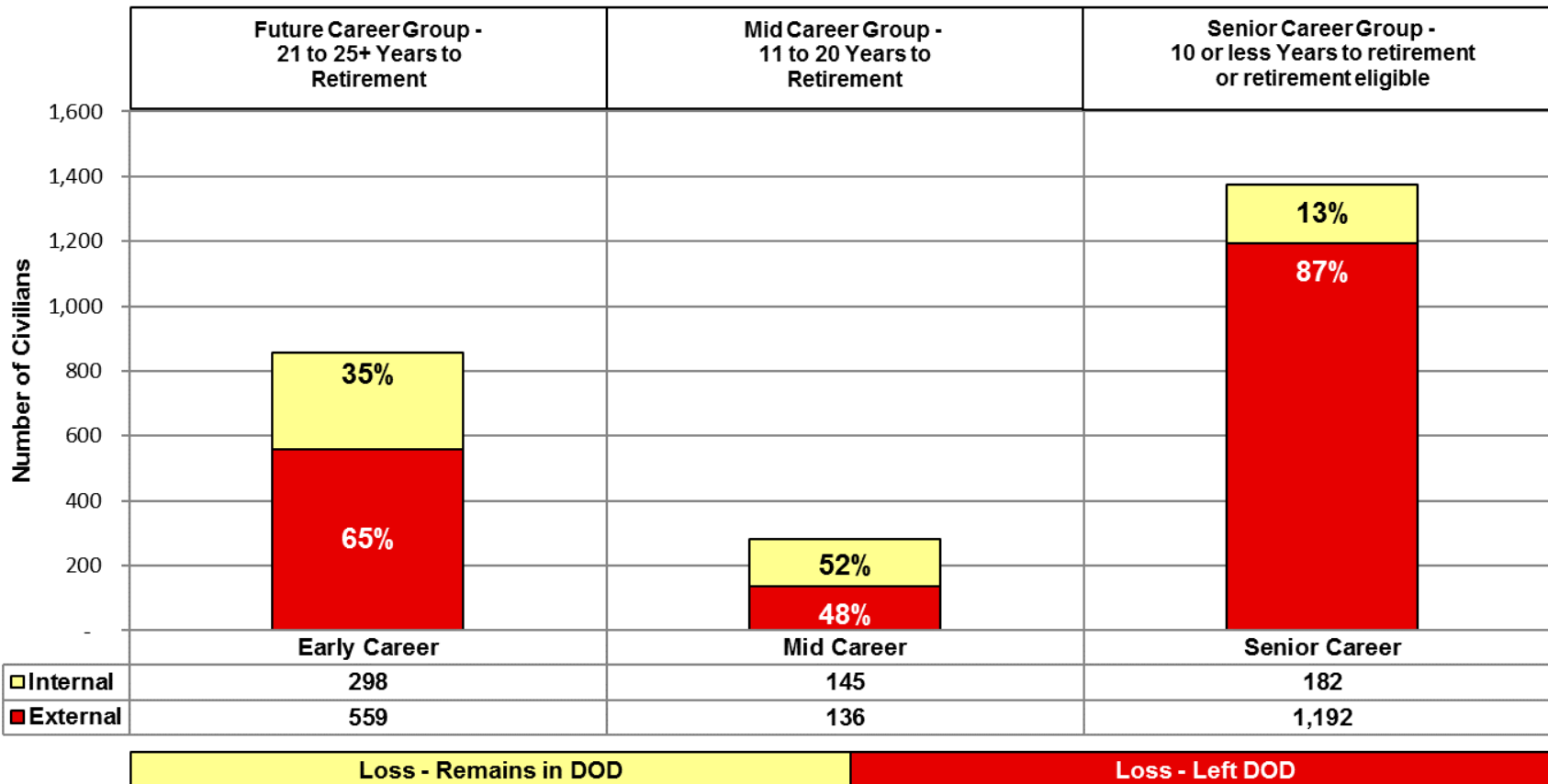


# Engineering Internal/External Loss % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering

Workforce Lifecycle FY2017Q4 Losses\*



Source: RAND NDRI Forces and Resources Policy Center analysis using DMDC data (FY2017Q4 and Previous FY Data)

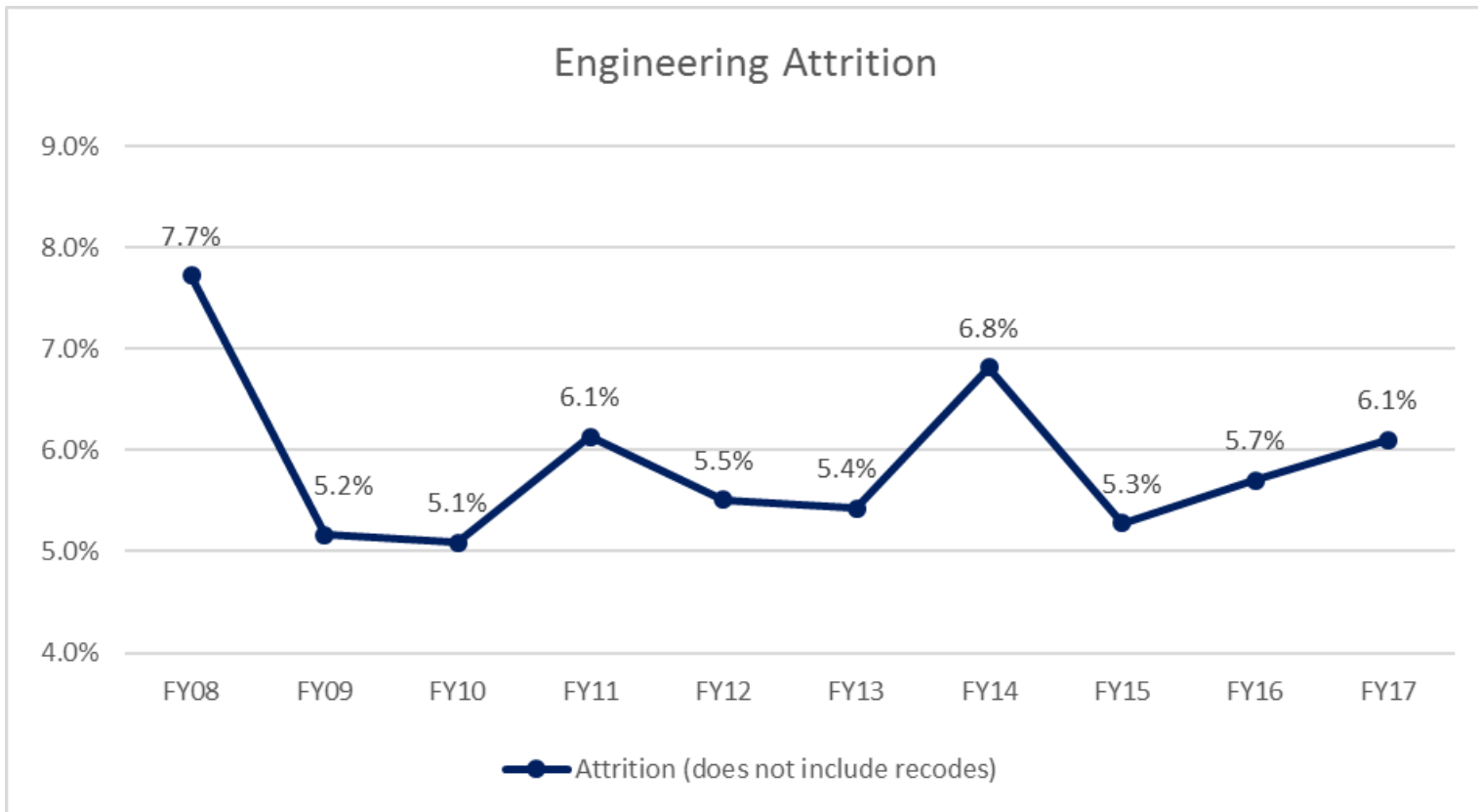
\*Does not include administrative losses

As of 30 Sep 2017





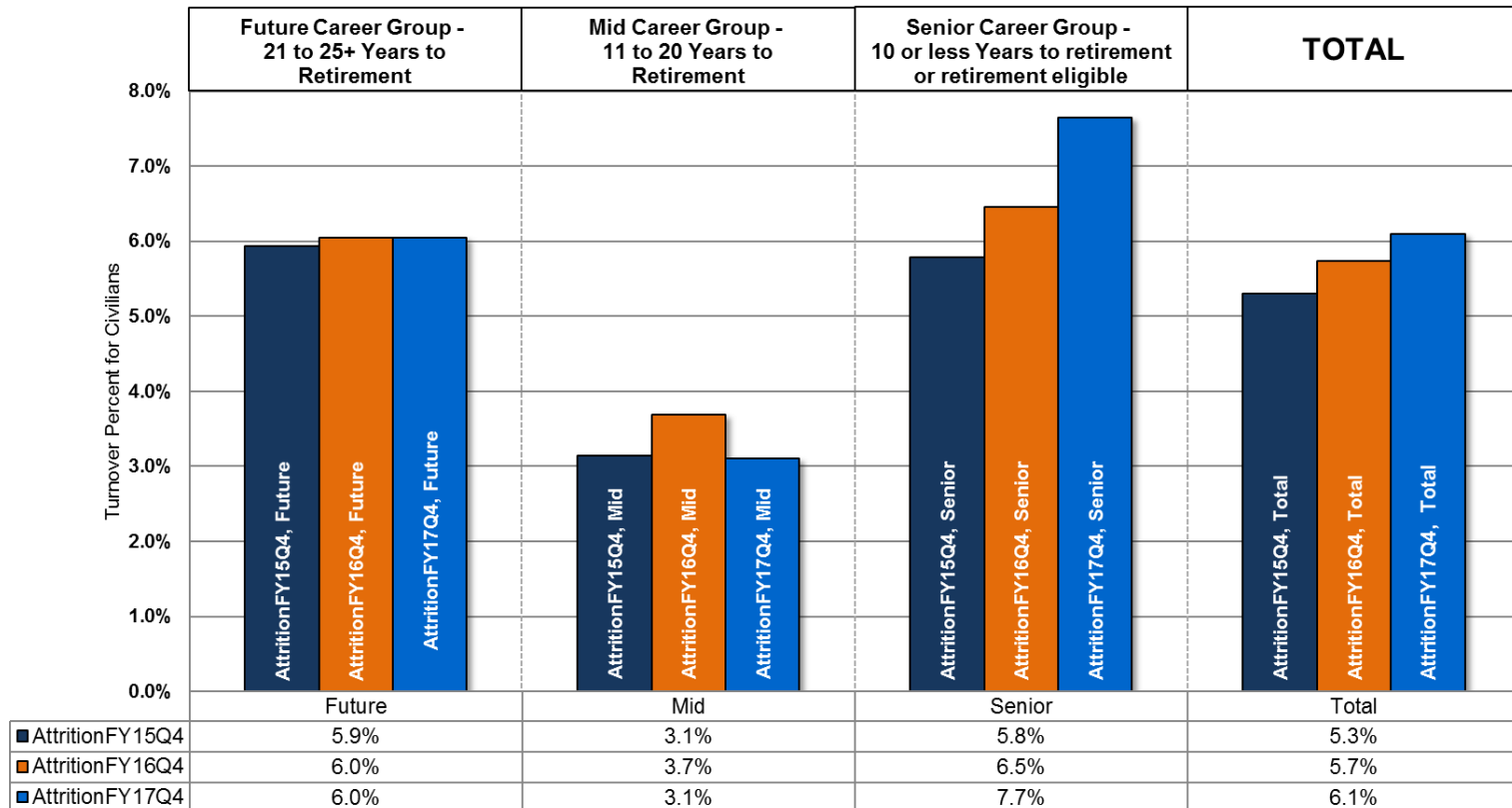
# Attrition Rates by FY/Quarter





# Engineering Attrition Rates by Career Group

## Defense Acquisition Workforce Attrition - Engineering (Civilian) (FY15Q4, FY16Q4, FY17Q4)(by Career Lifecycle Group)



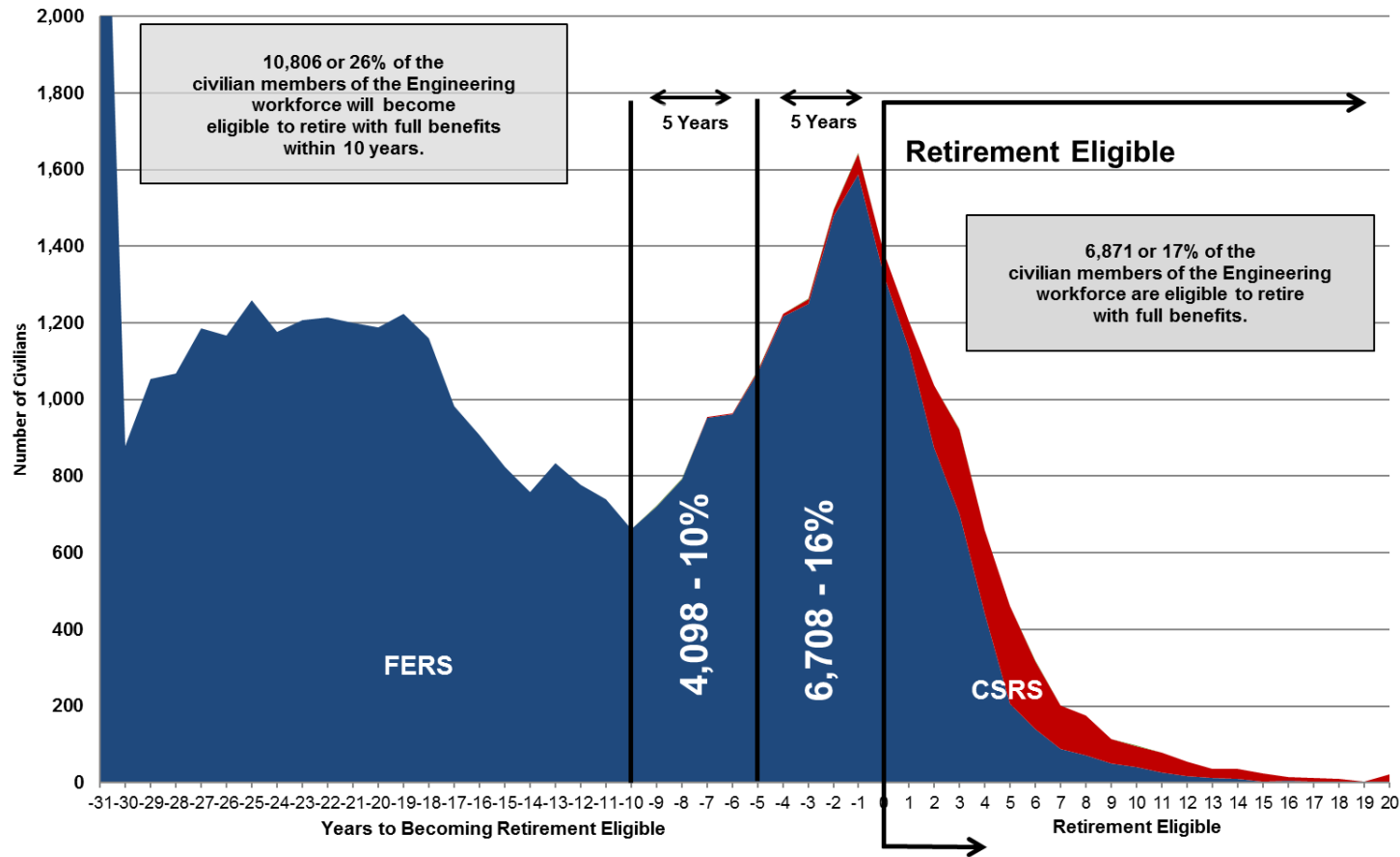


# Engineering Civilian Distribution by Years to Retirement Eligibility



## Defense Acquisition Workforce - Engineering

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



As of 30 Sep 2017



***END***