



# Defense Acquisition Workforce Key Information

Engineering

As of FY18Q3 (30 June 2018)



# Fact Sheet



## Human Capital Fact Sheet

Defense Acquisition Workforce Engineering	FY 2008				FY2018Q3			
	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	42,068	1,512	43,580	169,063
Change in size from 2008	-	-	-	-	30%	-29%	26%	34%
Civilian/Military Composition	94%	6%	-	88% / 12%	97%	3%	-	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%	62%	42%	40%
<b>Certification</b>								
Level I or Higher Achieved	78%	57%	77%	72%	89%	80%	88%	85%
Level II or Higher Achieved	70%	25%	68%	61%	74%	50%	73%	72%
Level III Achieved	58%	8%	55%	36%	53%	22%	52%	41%
Position Certification Requirement Met or Exceeded	67%	31%	64%	58%	83%	60%	82%	75%
Within 24 Months of Certification Requirement	18%	52%	20%	27%	16%	36%	16%	22%
Does Not Meet Certification Requirement	15%	17%	15%	14%	1%	4%	1%	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)	34/24/42(%)	-	-	24/26/49(%)
Average Years of Service	17	9	16	17	15	9	15	15
Retirement Eligible*	3,965(12%)	-	-	19,051(17%) (Civ)	7,887(19%)	-	-	29,101(19%)
Retirement Eligible w/in 5 Years*	4,804(15%)	-	-	21,315(19%) (Civ)	6,034(14%)	-	-	25,072(16%)
Total Gains/Losses*	4,050/4,197	-	-	14,245/15,030 (Civ)	4,385/3,334	-	-	17,613/12,259

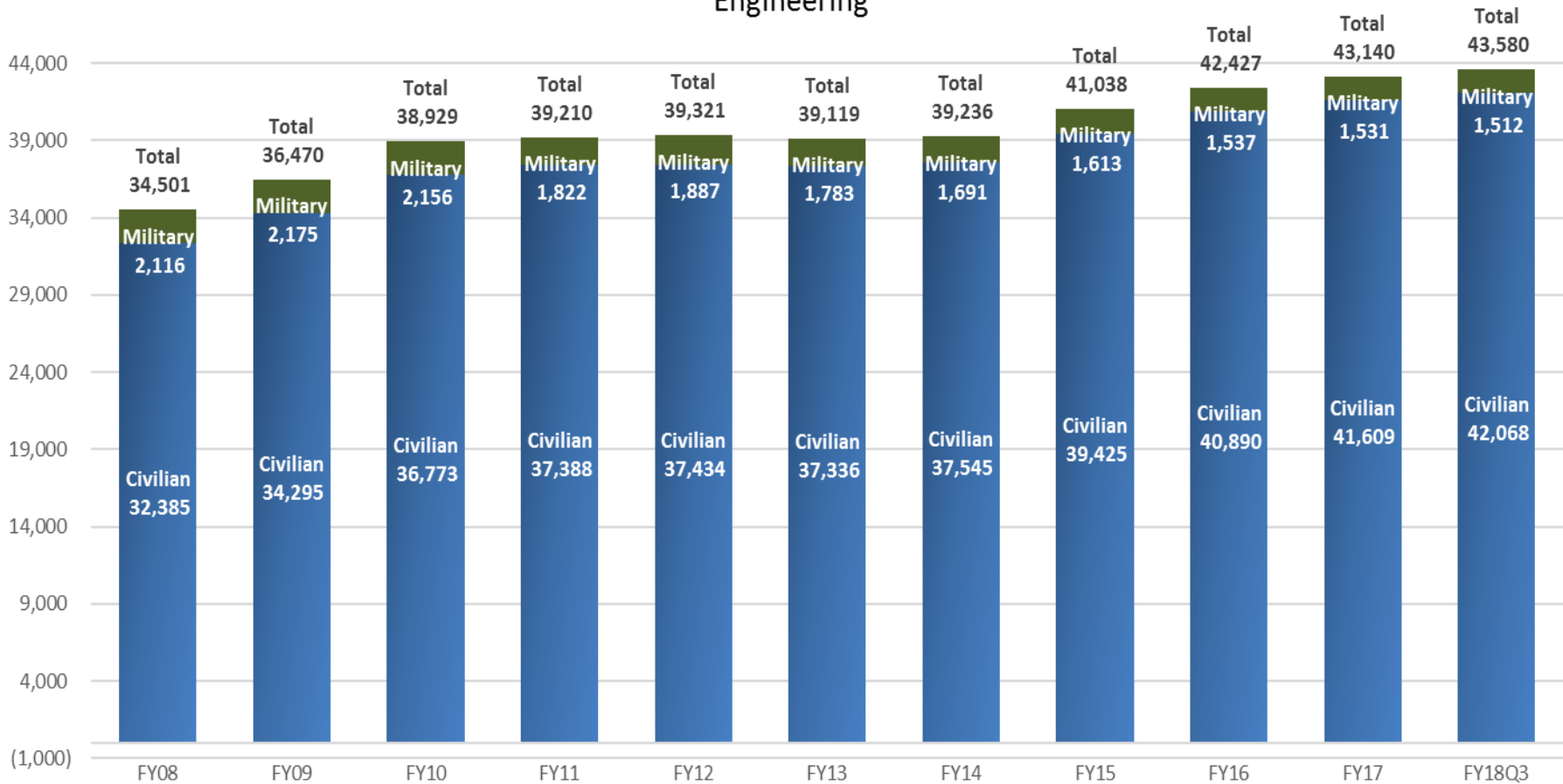
Source: Data generated by OUSD(A&S)/Human Capital Initiatives using the A&S Workforce Data Mart & analysis support from RAND.



# Engineering Total Workforce

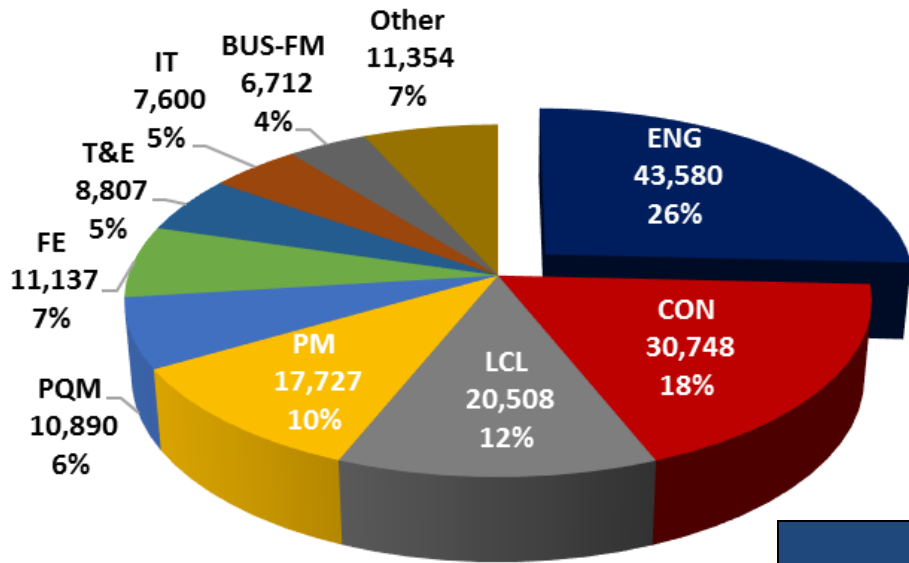


## Engineering





# AWF by Component and Career Field



FY18Q3	Army	Navy	Marine Corps	Air Force	4th Estate	Totals	% Total
Auditing	-	-	-	-	4,209	4,209	2.5%
Business - CE	250	535	34	524	91	1,434	0.8%
Business - FM	1,743	2,086	179	2,123	581	6,712	4.0%
Contracting	7,895	6,115	541	8,246	7,951	30,748	18.2%
Engineering	9,024	22,726	342	9,385	2,103	43,580	25.8%
Facilities Engineering	4,705	5,634	33	670	95	11,137	6.6%
Information Technology	1,744	3,170	223	1,400	1,063	7,600	4.5%
Life Cycle Logistics	6,907	6,124	621	3,514	3,342	20,508	12.1%
Production, Quality and Man	1,387	3,689	42	454	5,318	10,890	6.4%
Program Management	3,352	5,571	758	6,141	1,905	17,727	10.5%
Property	51	64	-	17	259	391	0.2%
Purchasing	344	381	42	52	502	1,321	0.8%
S&T Manager	497	508	3	2,851	118	3,977	2.4%
Small Business	-	-	-	-	4	4	0.002%
Test and Evaluation	1,896	3,214	127	3,201	369	8,807	5.2%
Unknown/Other	8	2	-	-	8	18	0.01%
<b>Totals</b>	<b>39,803</b>	<b>59,819</b>	<b>2,945</b>	<b>38,578</b>	<b>27,918</b>	<b>169,063</b>	
<b>Component %</b>	<b>23.5%</b>	<b>35.4%</b>	<b>1.7%</b>	<b>22.8%</b>	<b>16.5%</b>		



# Engineering Workforce Historical Size by Agency FY08 – FY18Q3



Engineering Defense Acq Workforce Agency	FY08	FY10	FY12	FY14	FY16	FY17	FY18Q3
Navy	16,353	18,932	19,121	19,423	21,623	22,297	22,726
MARINE CORPS	223	338	377	374	354	341	342
AIR FORCE	6,429	7,625	8,649	8,473	9,139	9,276	9,385
ARMY	10,769	10,644	9,810	8,981	9,140	9,096	9,024
DCMA	282	813	974	1,157	1,271	1,229	1,220
MDA	281	623	644	605	601	603	594
DISA	89	58	69	74	70	66	68
NRO	-	-	-	-	66	78	56
DAU	33	46	49	40	45	43	48
DTRA	7	27	35	44	47	35	30
DMEA	-	29	23	20	32	31	29
OSD	31	25	21	23	22	22	21
DLA	19	16	11	11	13	14	15
DHA	2	9	10	6	4	8	9
JCS	-	-	12	10	7	6	7
DeCA	-	-	-	-	3	3	5
TRMC	-	-	1	1	1	1	1
DTIC	1	-	-	-	-	-	-
DSCA	1	-	-	-	-	-	-
IG	1	-	-	-	-	-	-
ASD	-	4	1	-	-	-	-
4th Estate Other	16	12	-	-	-	-	-
<b>TOTAL</b>	<b>34,537</b>	<b>39,201</b>	<b>39,807</b>	<b>39,242</b>	<b>42,438</b>	<b>43,149</b>	<b>43,580</b>

% Change Since FY08	% Change Since FY17
39%	2%
53%	0%
46%	1%
-16%	-1%
333%	-1%
111%	-1%
-24%	3%
	-28%
45%	12%
329%	-14%
	-6%
-32%	-5%
-21%	7%
350%	13%
	17%
	67%
	0%
-100%	
-100%	
-100%	
-100%	
↑ 26%	↑ 1%



# Engineering Workforce Historical Size (Quarterly) by Agency FY16Q3 – FY18Q3



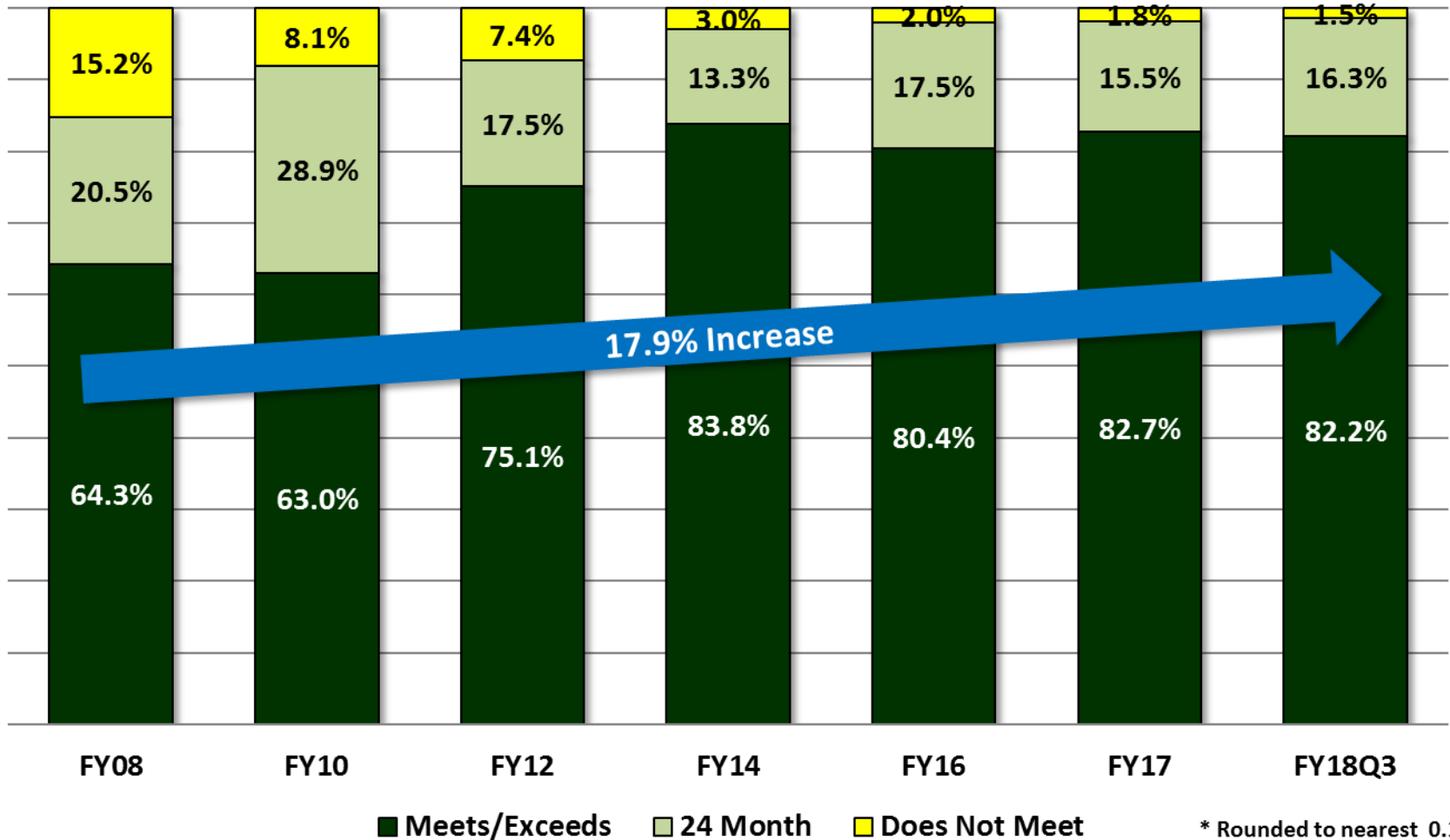
Engineering Defense Acq Workforce Agency	FY16Q4	FY17Q1	FY17Q2	FY17Q3	FY17Q4	FY18Q1	FY18Q2	FY18Q3	% Change Since FY17Q3
Navy	21,623	21,652	21,668	21,777	22,297	22,276	22,376	22,726	4%
MARINE CORPS	354	355	353	357	341	339	336	342	-4%
AIR FORCE	9,139	9,126	9,221	9,211	9,276	9,178	9,271	9,385	2%
ARMY	9,140	9,145	9,122	9,008	9,096	9,084	9,060	9,024	0%
DCMA	1,271	1,275	1,262	1,239	1,229	1,226	1,231	1,220	-2%
MDA	601	600	597	605	603	597	594	594	-2%
DISA	70	73	73	72	66	68	66	68	-6%
NRO	66	68	72	75	78	78	72	56	-25%
DAU	45	44	44	46	43	46	47	48	4%
DTRA	47	43	42	39	35	31	30	30	-23%
DMEA	32	31	31	31	31	32	31	29	-6%
OSD	22	22	22	23	22	22	22	21	-9%
DLA	13	13	12	13	14	14	14	15	15%
DHA	4	4	4	6	8	8	9	9	50%
JCS	7	7	7	7	6	6	8	7	0%
DeCA	3	3	2	1	3	4	4	5	400%
TRMC	1	1	1	1	1	1	1	1	0%
<b>TOTAL</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>43,580</b>	<b>↑ 3%</b>



# Engineering Manager Historical DAWIA Certification FY08 – FY18Q3



## Engineering

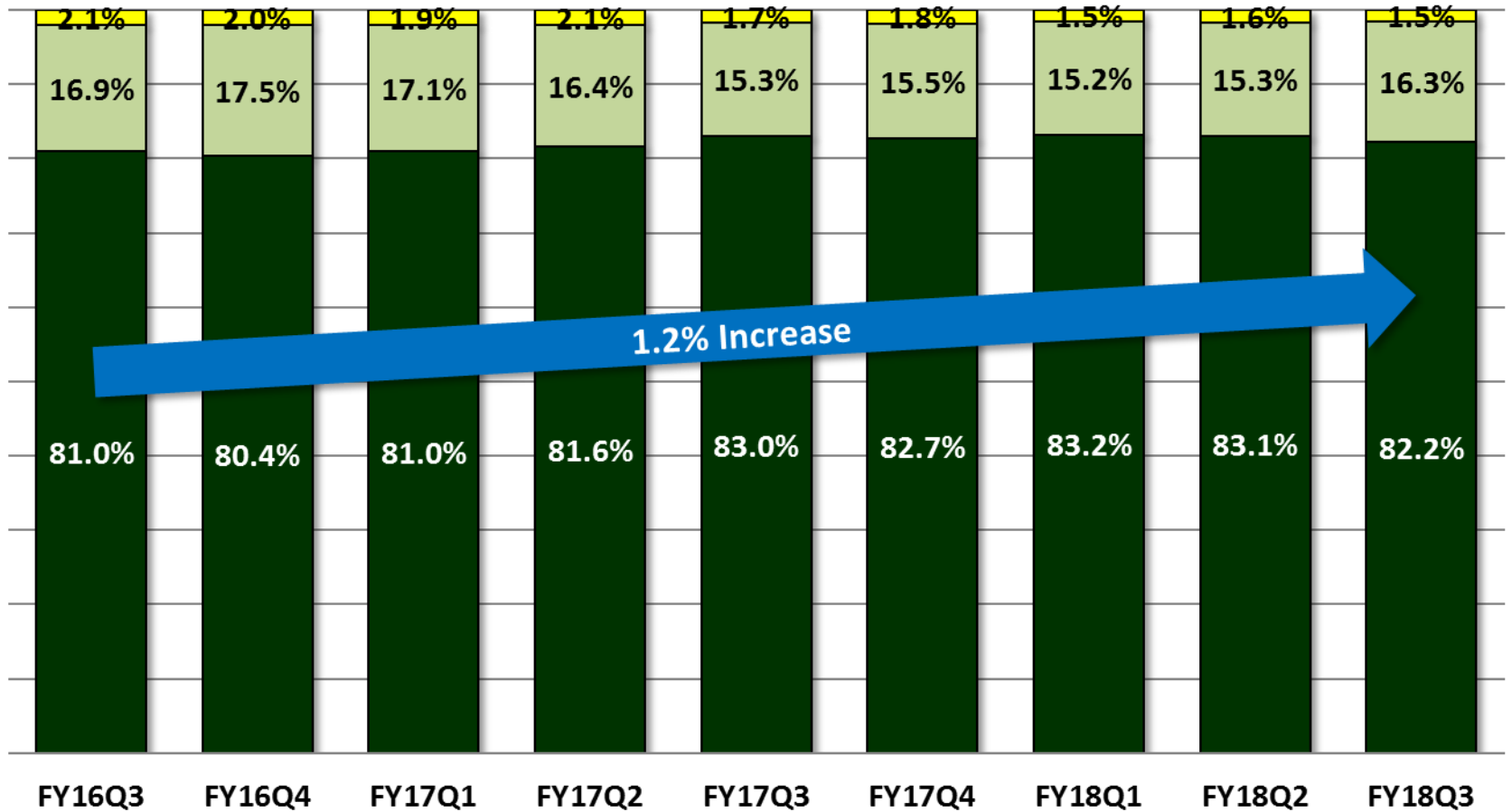




# Engineering Manager Historical (Quarterly) DAWIA Certification FY16Q3 – FY18Q3



## Engineering



■ Meets/Exceeds    ■ 24 Month    ■ Does Not Meet

\* Rounded to nearest 0.1%

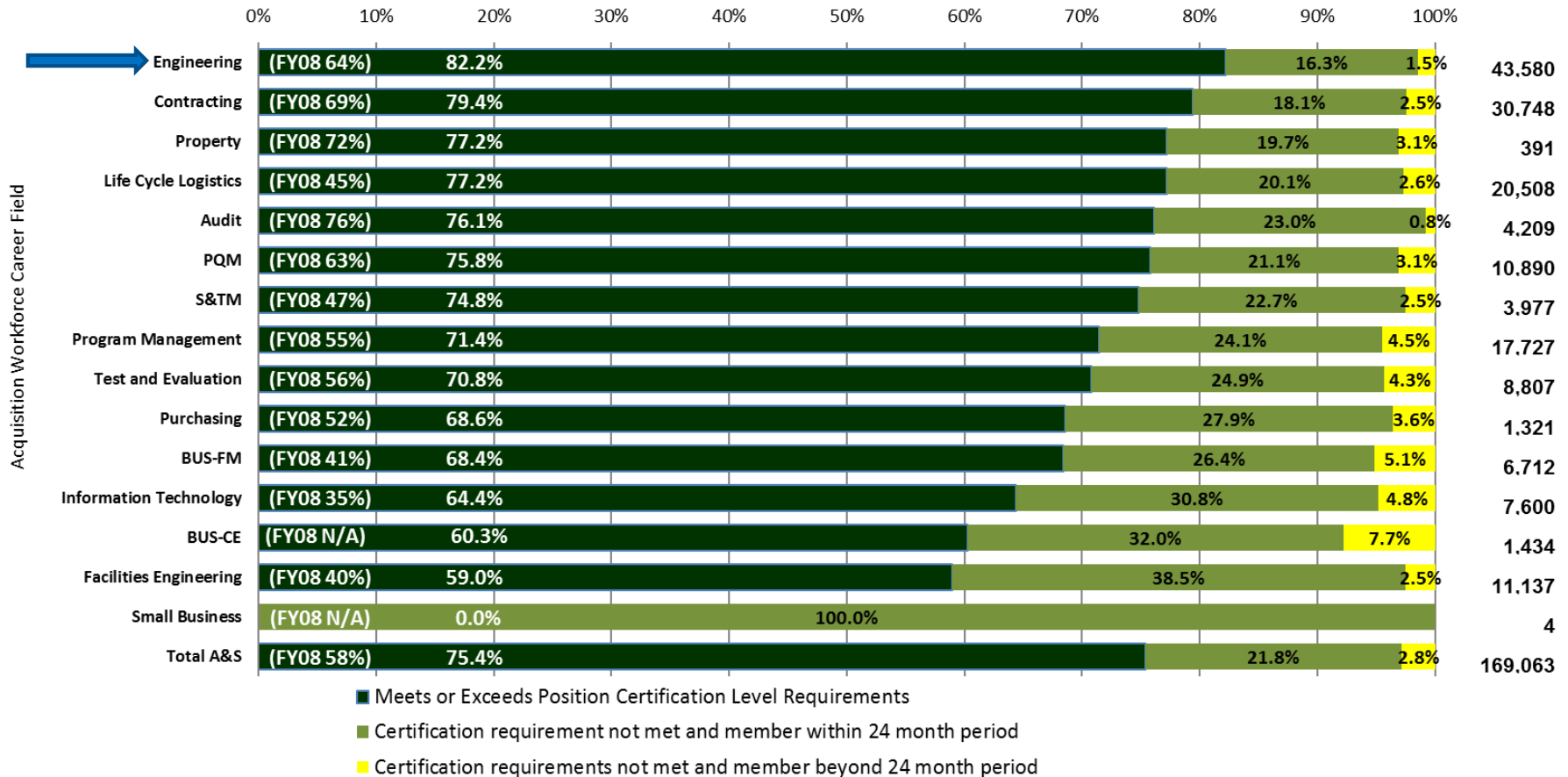




# DAWIA Certification by Career Field



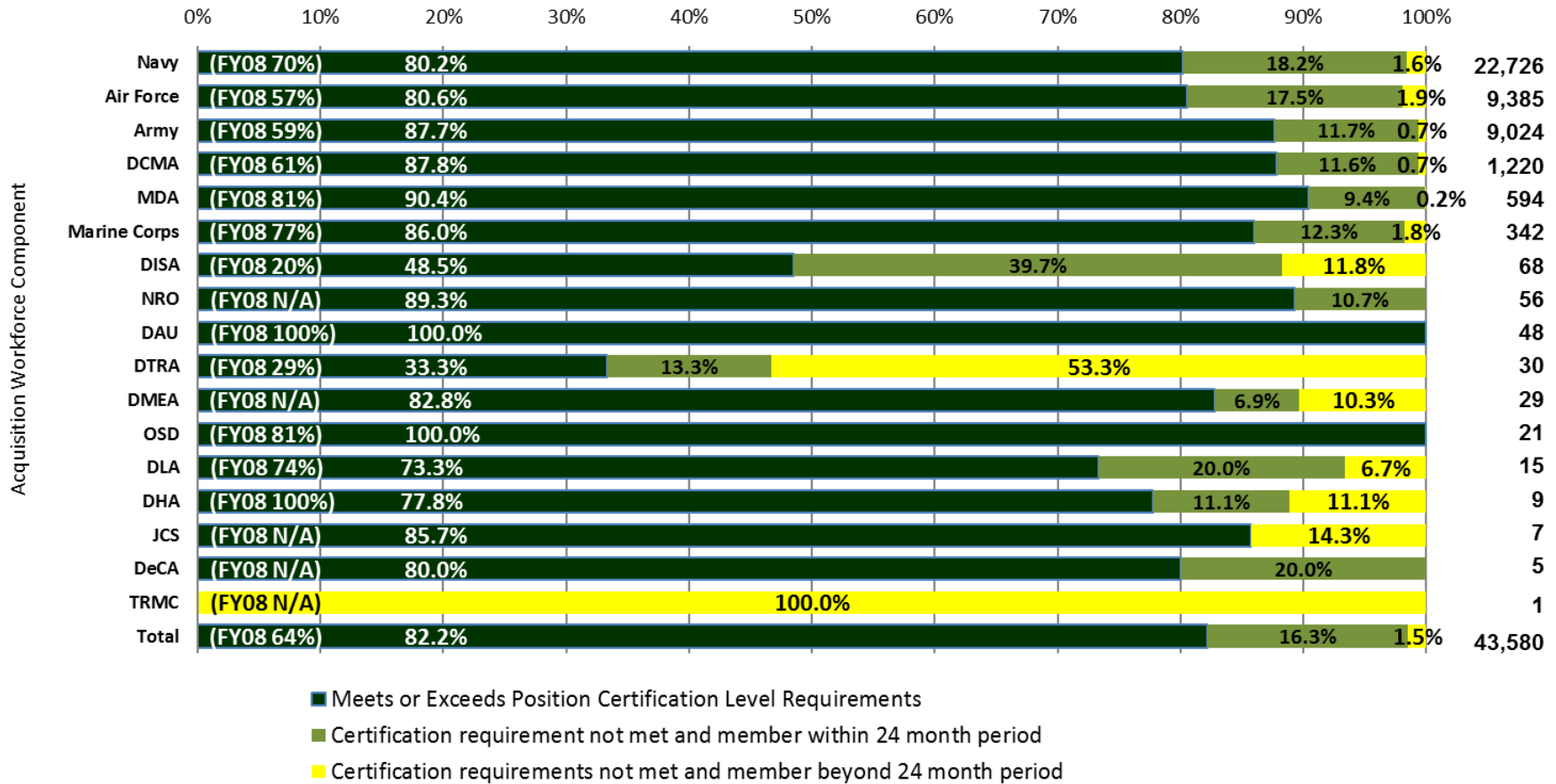
## Certification Level "Meet/Exceed" Rates by Career Field A&S (FY18Q3)





# Engineering DAWIA Certification by Component

## Certification Level "Meet/Exceed" Rates by Component Engineering (FY18Q3)





# Engineering DAWIA Certification Matrix + Bench Strength

Engineering		Achieved Certification Level				FY18Q3 TOTAL	% Meets Certification Requirement
Required Certification Level	No Level Achieved	Level I	Level II	Level III			
Level I	2,982	4,458	1,616	1,734	10,790	72.4%	
Level II	1,546	1,847	7,054	7,269	17,716	80.8%	
Level III	495	295	601	13,681	15,072	90.8%	
<i>Unspecified</i>	-	1	-	1	2		
<b>FY18Q3 TOTAL</b>	<b>5,023</b>	<b>6,601</b>	<b>9,271</b>	<b>22,685</b>	<b>43,580</b>	<b>82.2%</b>	
	11.5%	15.1%	21.3%	52.1%			

No Level Achieved includes those within the 24 month grace period

Bench Strength			
Org	# Meet or % Meets or		Career Field Rank
	Exceeds	Exceeds*	
DAW	127,526	75.4%	
Army	31,313	78.7%	
Navy	44,740	74.8%	
Marine Cor	2,059	69.9%	
Air Force	27,405	71.0%	
4th Estate	22,009	78.8%	
Engineering	35,812	82.2%	1 of 14

\*\* Based on population total without unspecified positions

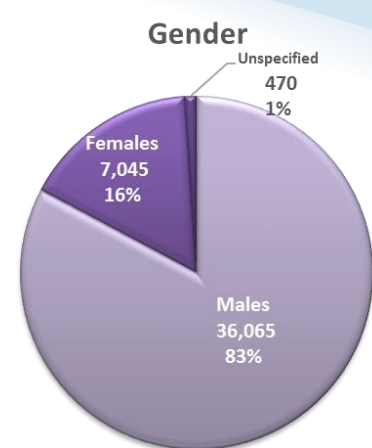
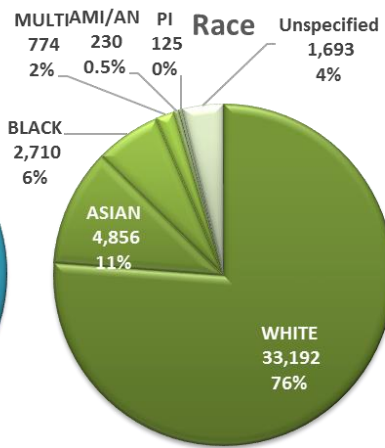
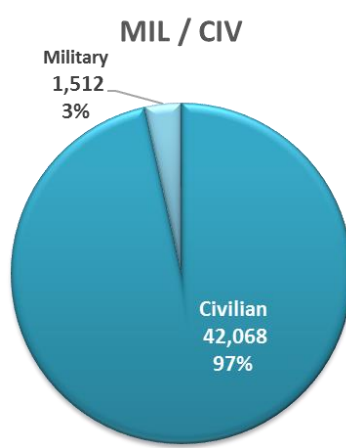
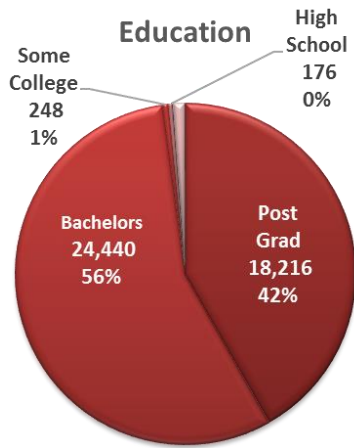
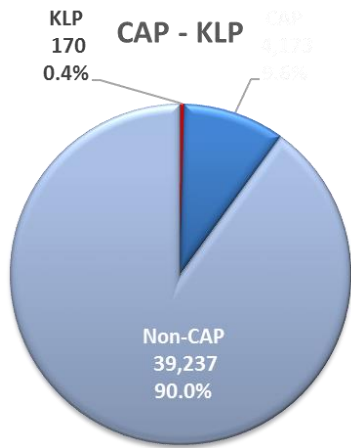
Certification Requirement	Meets	Within 24 Months	Does Not Meet	DAW TOTAL	
Level I	7,808	2,947	35	10,790	24.8%
Level II	14,323	2,996	397	17,716	40.7%
Level III	13,681	1,181	210	15,072	34.6%
<i>Unspecified</i>	1	1	-	2	0.0%
<b>Engineering TOTAL</b>	<b>35,813</b>	<b>7,125</b>	<b>642</b>	<b>43,580</b>	
	82.2%	16.3%	1.5%		

  = Compliance  
  = Exceeds Requirements

\* NOTE: Rounded to nearest 0.1%



# Demographics



Occupied Position Type	Engineering	Entire DAW
Key Leadership Positions (KLPs)	170 0.4%	1,195 0.7%
Critical Acquisition Positions (CAPs) *	4,173 9.6%	16,558 9.8%
Non-CAP Positions	39,237 90.0%	151,120 89.4%
Unknown	- 0.0%	190 0.1%
<b>TOTAL</b>	<b>43,580</b>	<b>169,063</b>

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

Highest Level of Education	Engineering	Entire DAW
Post Grad	18,216 41.8%	67,982 40.2%
Bachelors	24,440 56.1%	74,020 43.8%
Some College	248 0.6%	11,918 7.0%
High School	176 0.4%	12,519 7.4%
Other	500 1.1%	2,624 1.6%
<b>TOTAL</b>	<b>43,580</b>	<b>169,063</b>

Military / Civilian	Engineering	Entire DAW
Civilian	42,068 96.5%	153,396 90.7%
Military	1,512 3.5%	15,667 9.3%
<b>TOTAL</b>	<b>43,580</b>	<b>169,063</b>

Race	Engineering	Entire DAW
WHITE	33,192 76.2%	123,628 73.1%
ASIAN	4,856 11.1%	20,326 12.0%
BLACK	2,710 6.2%	11,372 6.7%
MULTI	774 1.8%	4,607 2.7%
AMI/AN	230 0.5%	1,016 0.6%
PI	125 0.3%	849 0.5%
Unspecified	1,693 3.9%	7,265 4.3%
<b>TOTAL</b>	<b>43,580</b>	<b>169,063</b>

Gender	Engineering	Entire DAW
Males	36,065 82.8%	118,376 70.0%
Females	7,045 16.2%	48,615 28.8%
Unspecified	470 1.1%	2,072 1.2%
<b>TOTAL</b>	<b>43,580</b>	<b>169,063</b>



# Engineering Size by Occupational Series

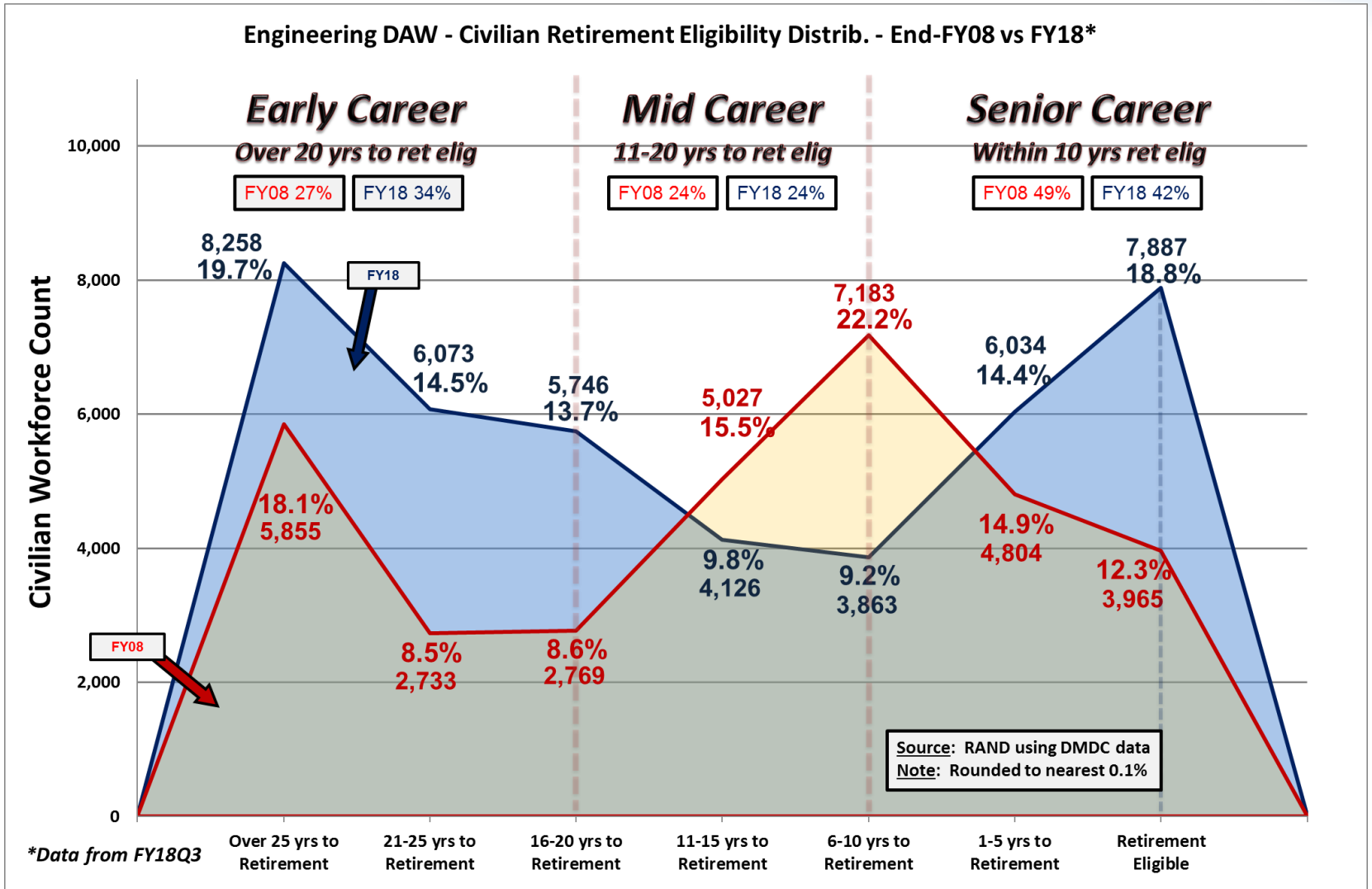
Civilian Occupational Series	Engineering	
0855 - Engineer, Electronics	10,513	25.0%
0801 - Engineer, General	8,547	20.3%
0830 - Engineer, Mechanical	6,630	15.8%
0861 - Engineer, Aerospace	2,935	6.98%
0854 - Engineer, Computers	2,669	6.34%
0850 - Engineer, Electrical	1,680	3.99%
1550 - Computer Scientist	4,135	9.83%
1515 - Operations Research Analyst	650	1.55%
1310 - Physicist	618	1.47%
0893 - Engineer, Chemical	485	1.15%
<i>Other</i>	3,206	7.62%
<b>TOTAL CIVILIAN</b>	<b>42,068</b>	<b>Civilians</b>



# **RAND NDRI Forces and Resources Policy Center Data Retirement / Loss Slides FY18Q3**



# Engineering Civilian Retirement Eligibility Distribution – FY08 / FY18Q3

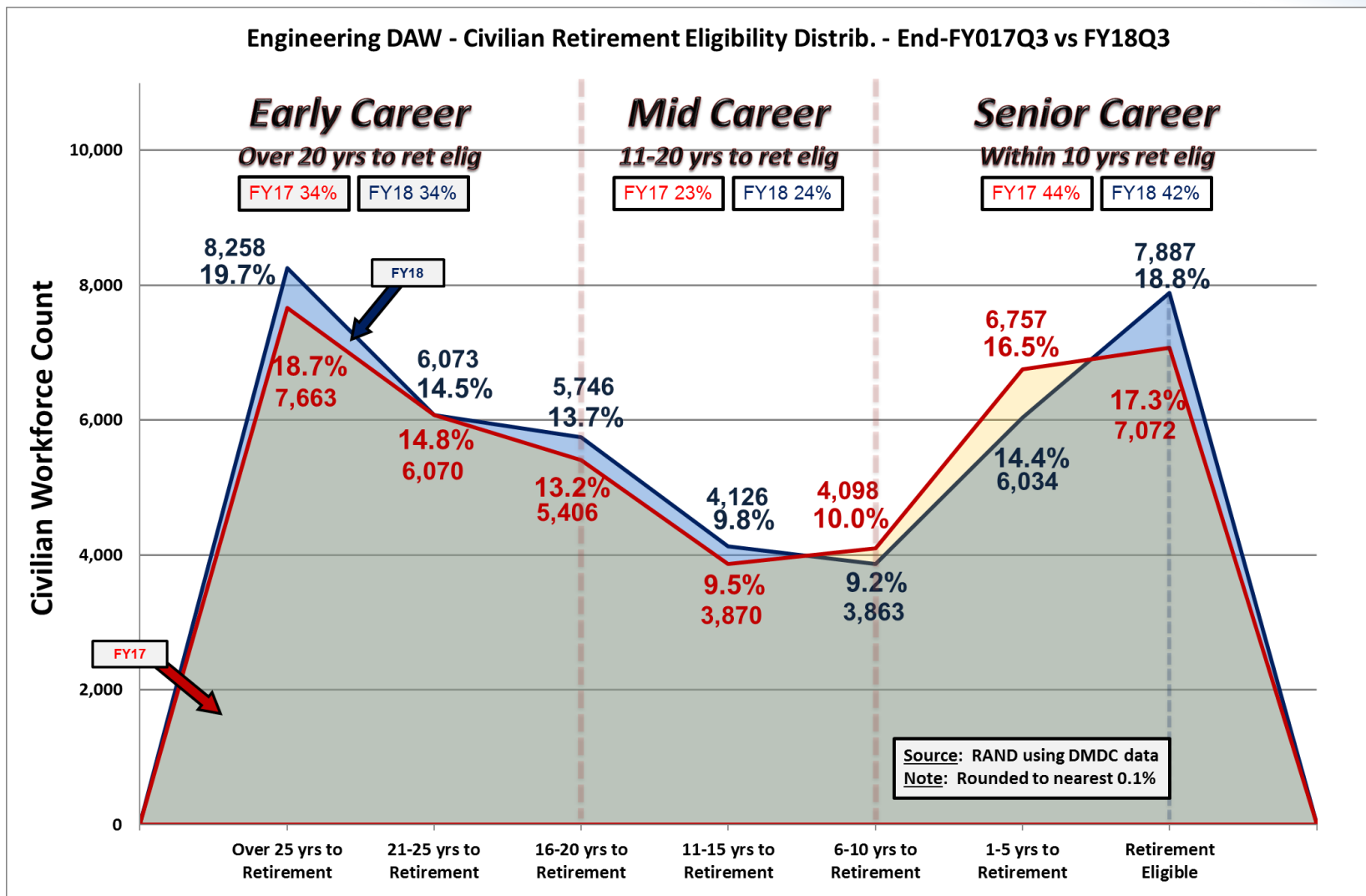


As of 30 Jun 2018





# Engineering Civilian Retirement Eligibility Distribution – (1 year) FY17Q3 / FY18Q3



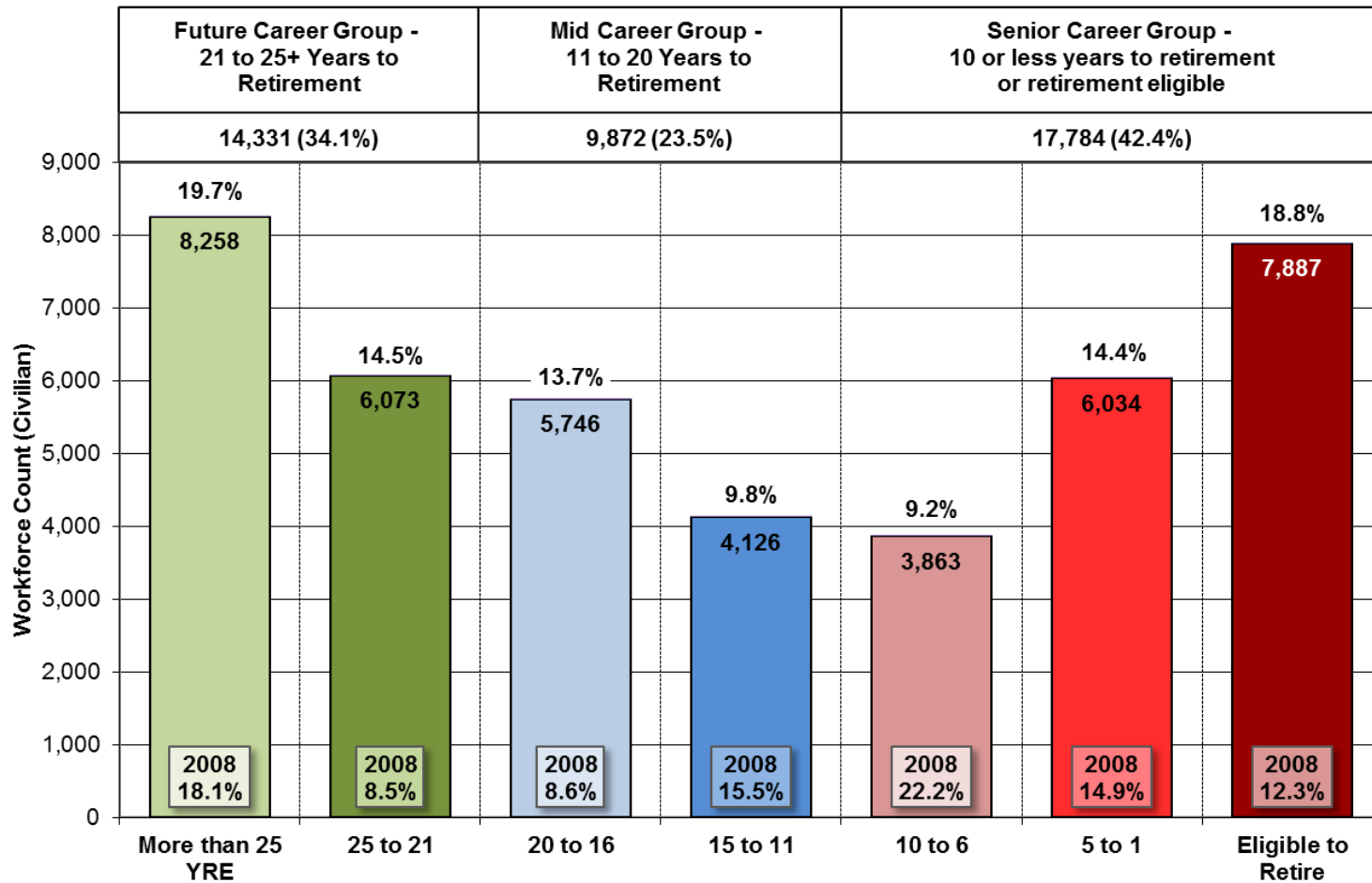
As of 30 Jun 2018





# Engineering Workforce Lifecycle Model by YRE

**Defense Acquisition Workforce Lifecycle Model (WLM)**  
by Years to Retirement Eligibility (YRE) - Civilian (FY2018Q3) - Engineering



As of 30 Jun 2018

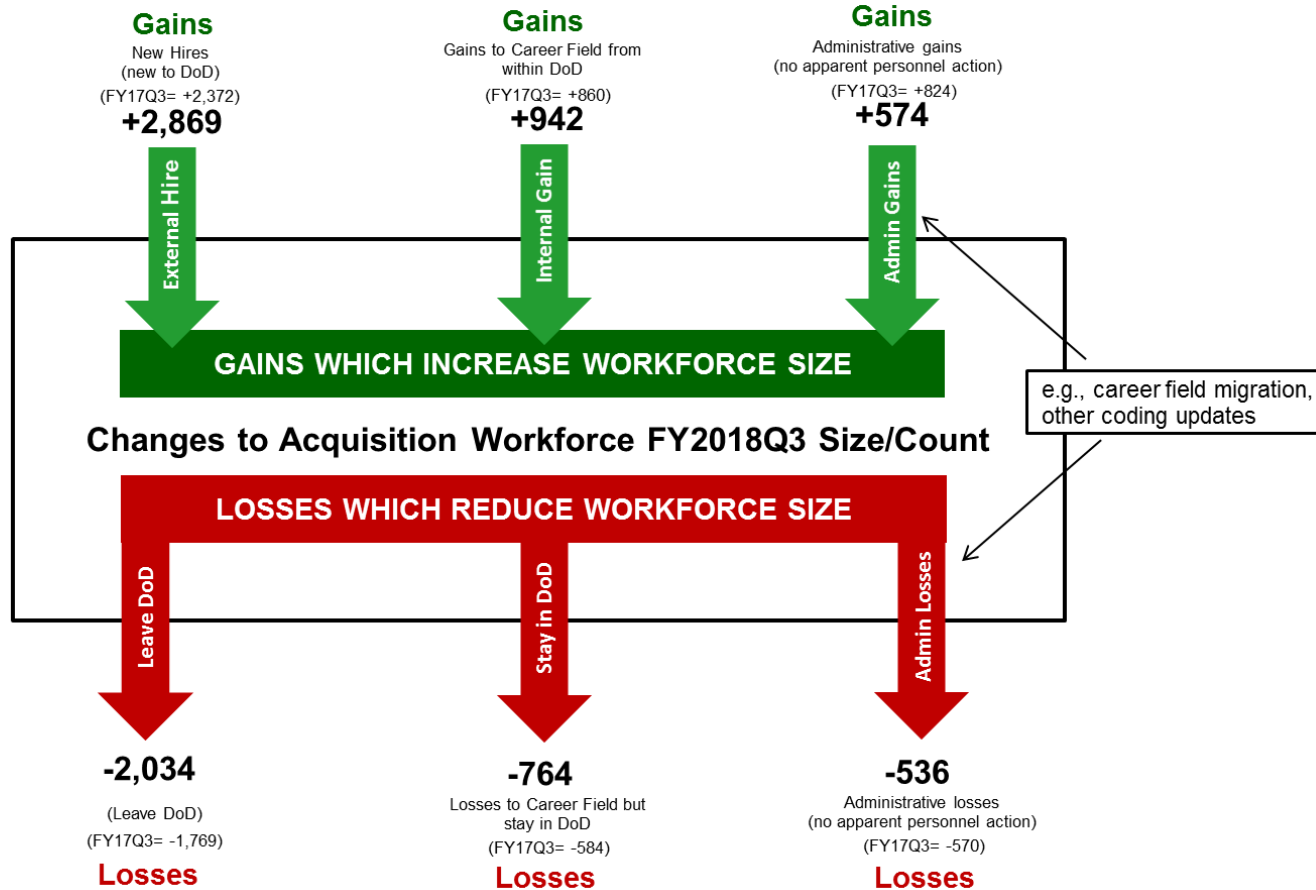


# Engineering Gains/Losses – New Hires Internal/External, Administrative



## Defense Acquisition Workforce (Civilian) (FY2018Q3) - Engineering

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



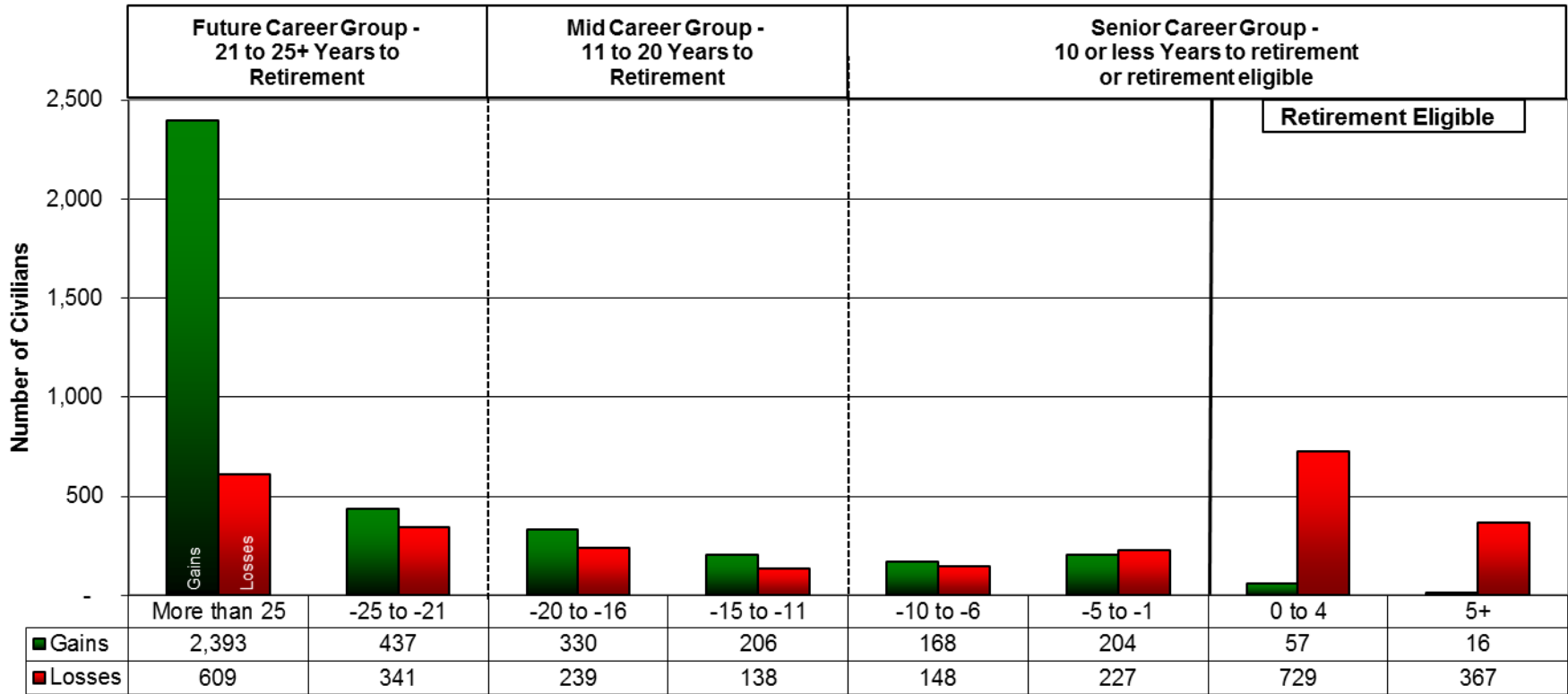
As of 30 Jun 2018



# Engineering Gains and Losses by YRE Groups

## Defense Acquisition Workforce (Civilian) - Engineering

Workforce Lifecycle FY2018Q3 Gains & Losses\*

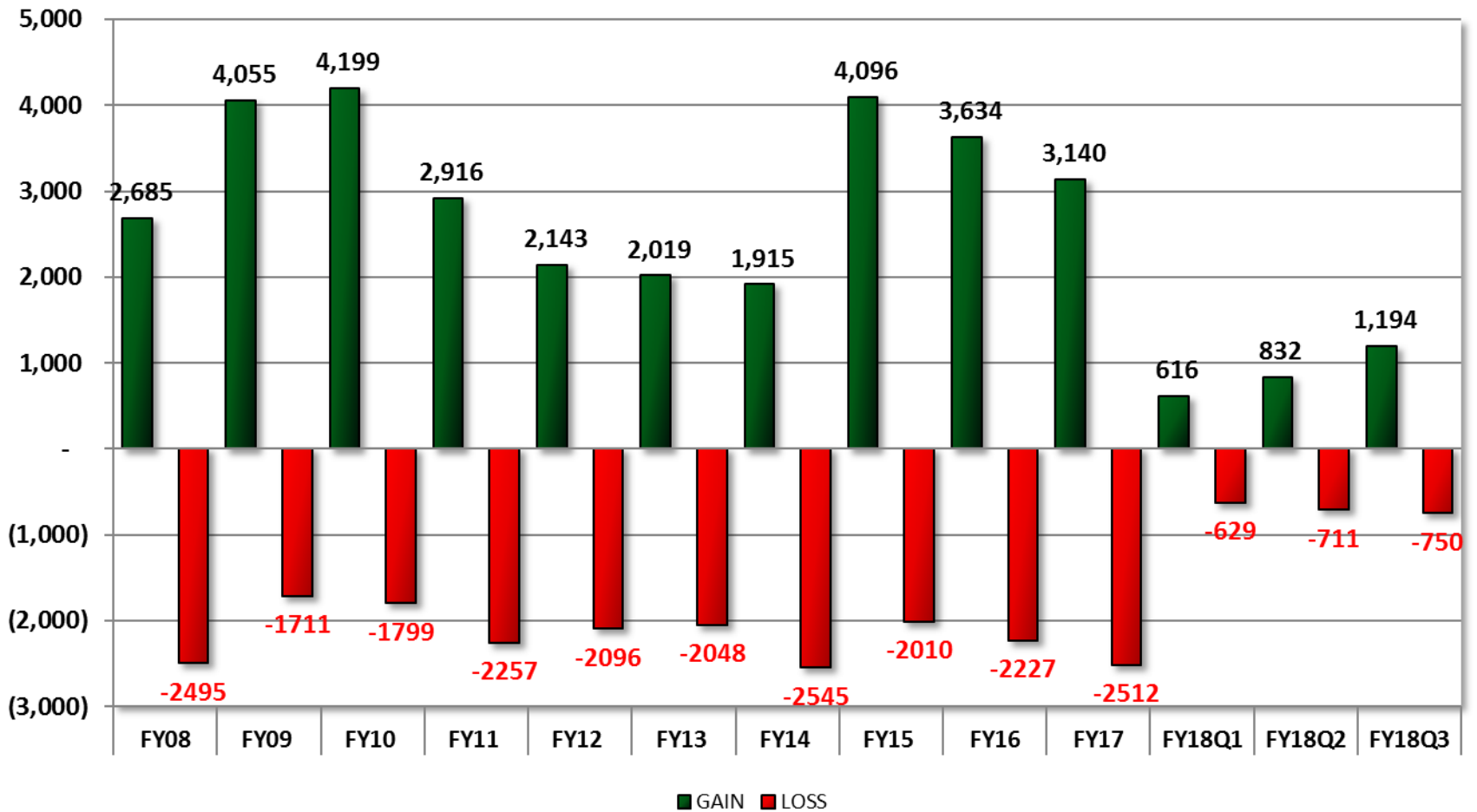


Career Lifecycle by Years to Retirement Eligibility

\*Does not include administrative gains and losses



# Engineering Historical Gains and Losses FY08 – FY18Q3



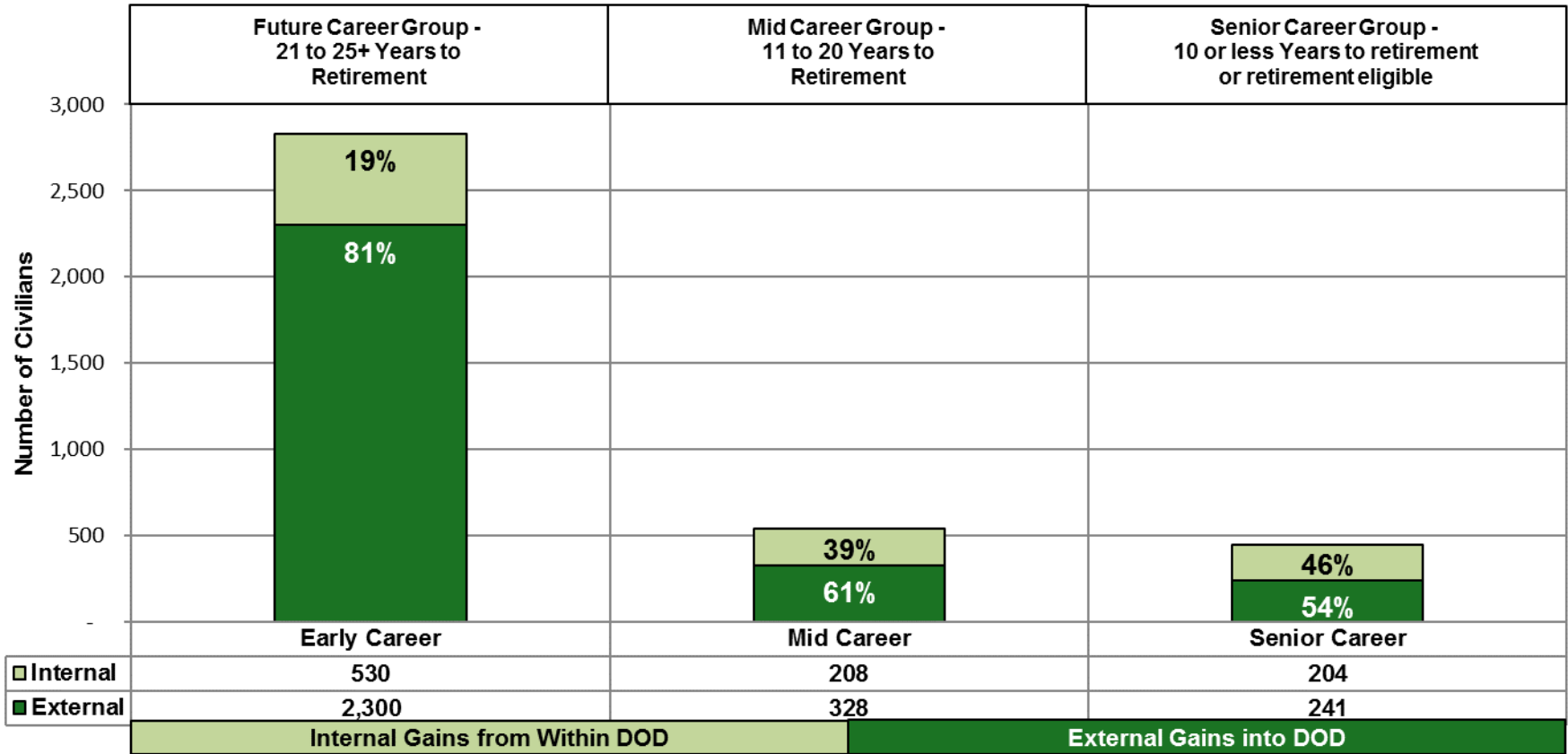
As of 30 Jun 2018



# Engineering Internal/External Gains % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering Workforce Lifecycle FY2018Q3 Gains\*



\*Does not include administrative gains

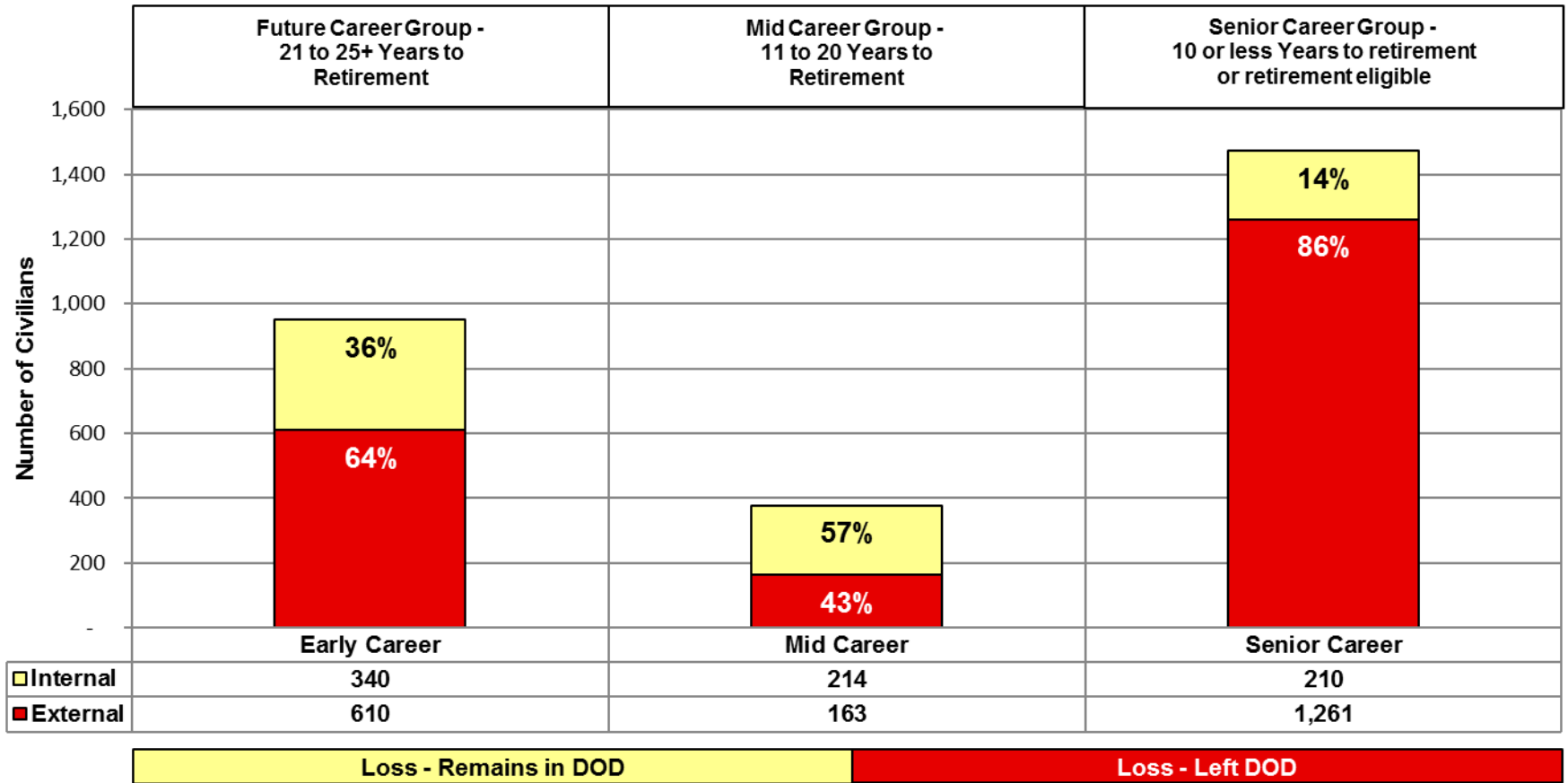


# Engineering Internal/External Loss % by Career Group



## Defense Acquisition Workforce (Civilian) - Engineering

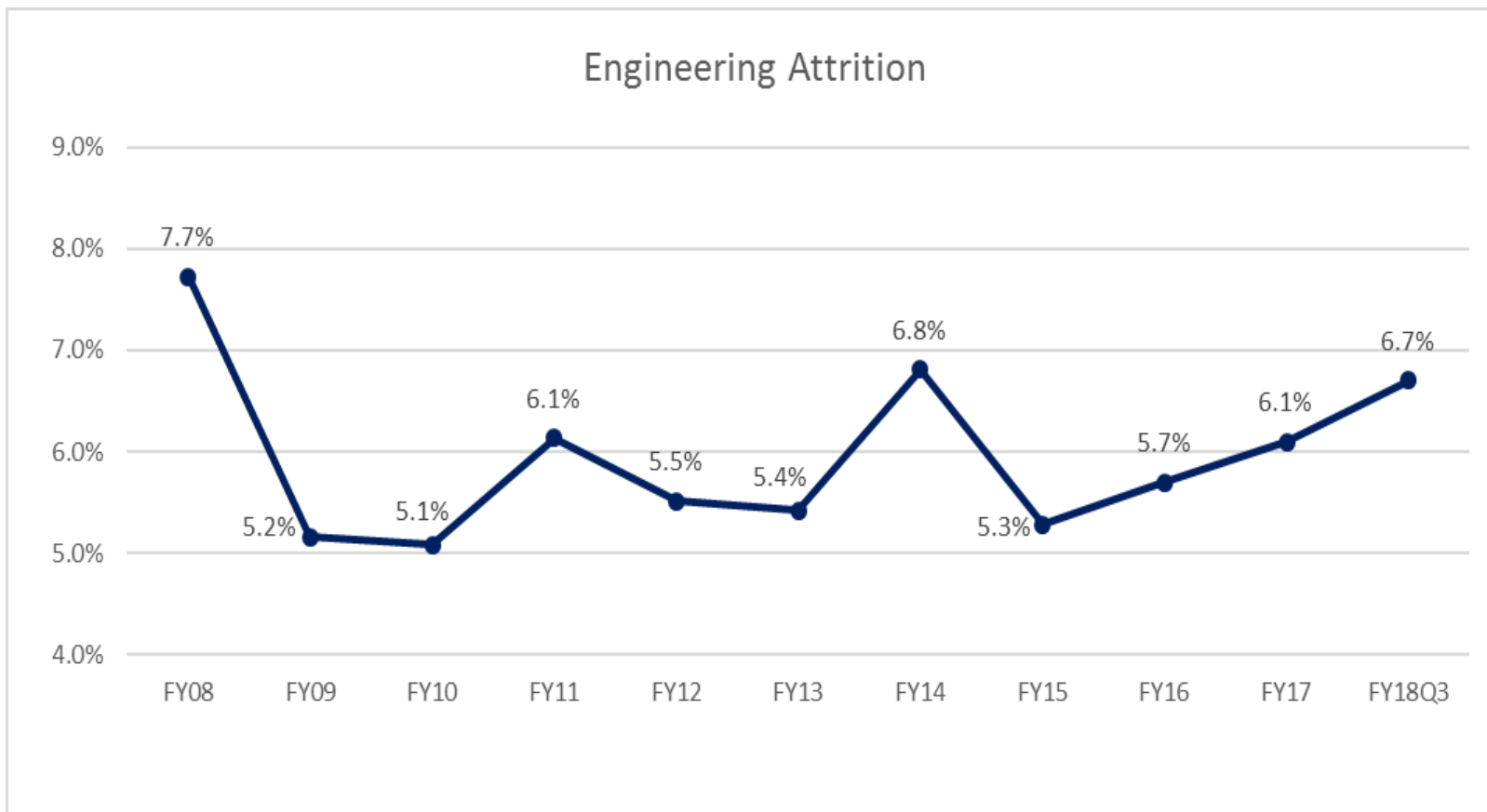
Workforce Lifecycle FY2018Q3 Losses\*



\*Does not include administrative losses



# Attrition Rates

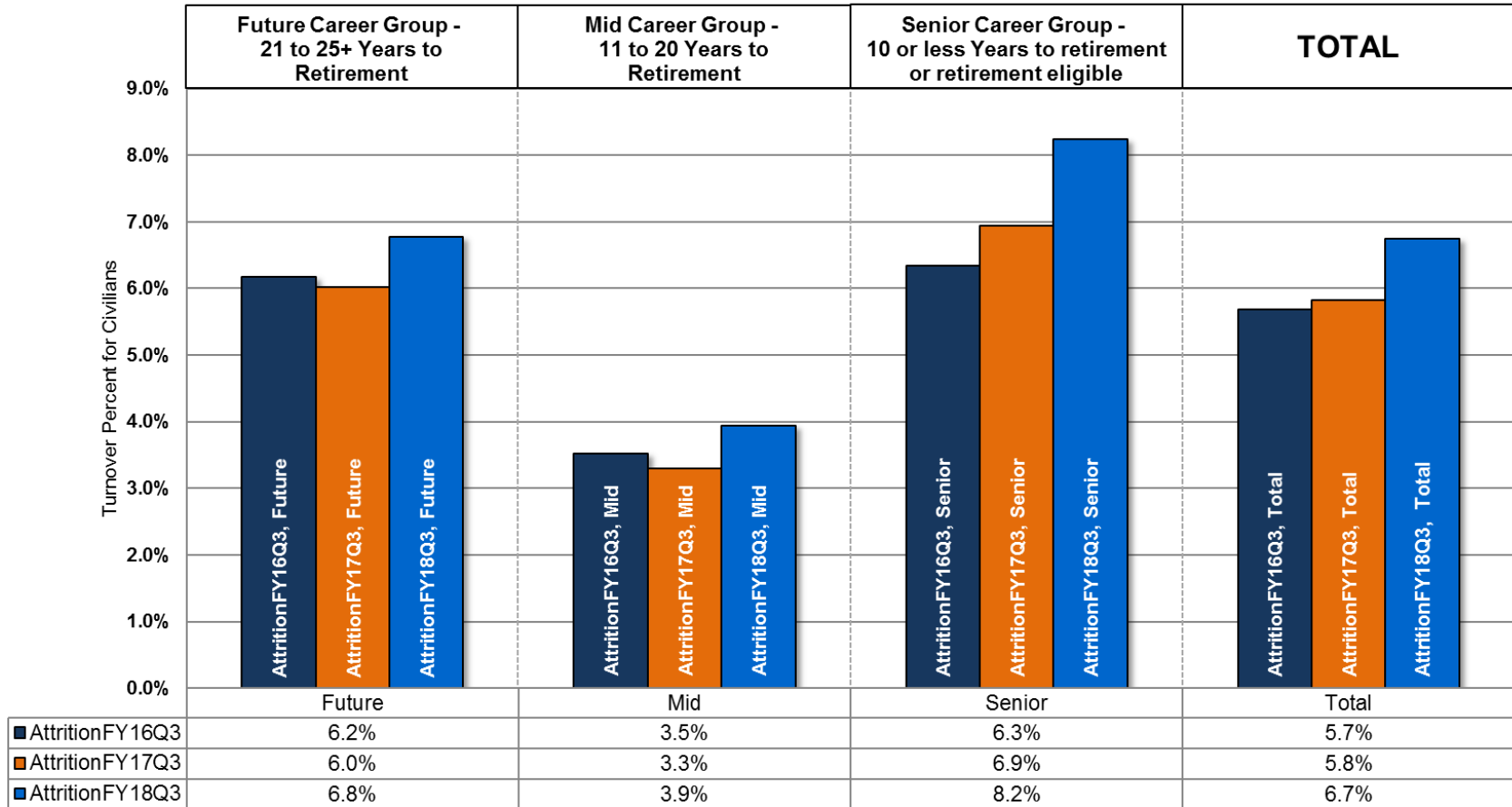


\*FY18Q3 includes attrition rate from end of FY17Q3 through FY18Q3



# Engineering Attrition Rates by Career Group

## Defense Acquisition Workforce Attrition - Engineering (Civilian) (FY16Q3, FY17Q3, FY18Q3)(by Career Lifecycle Group)





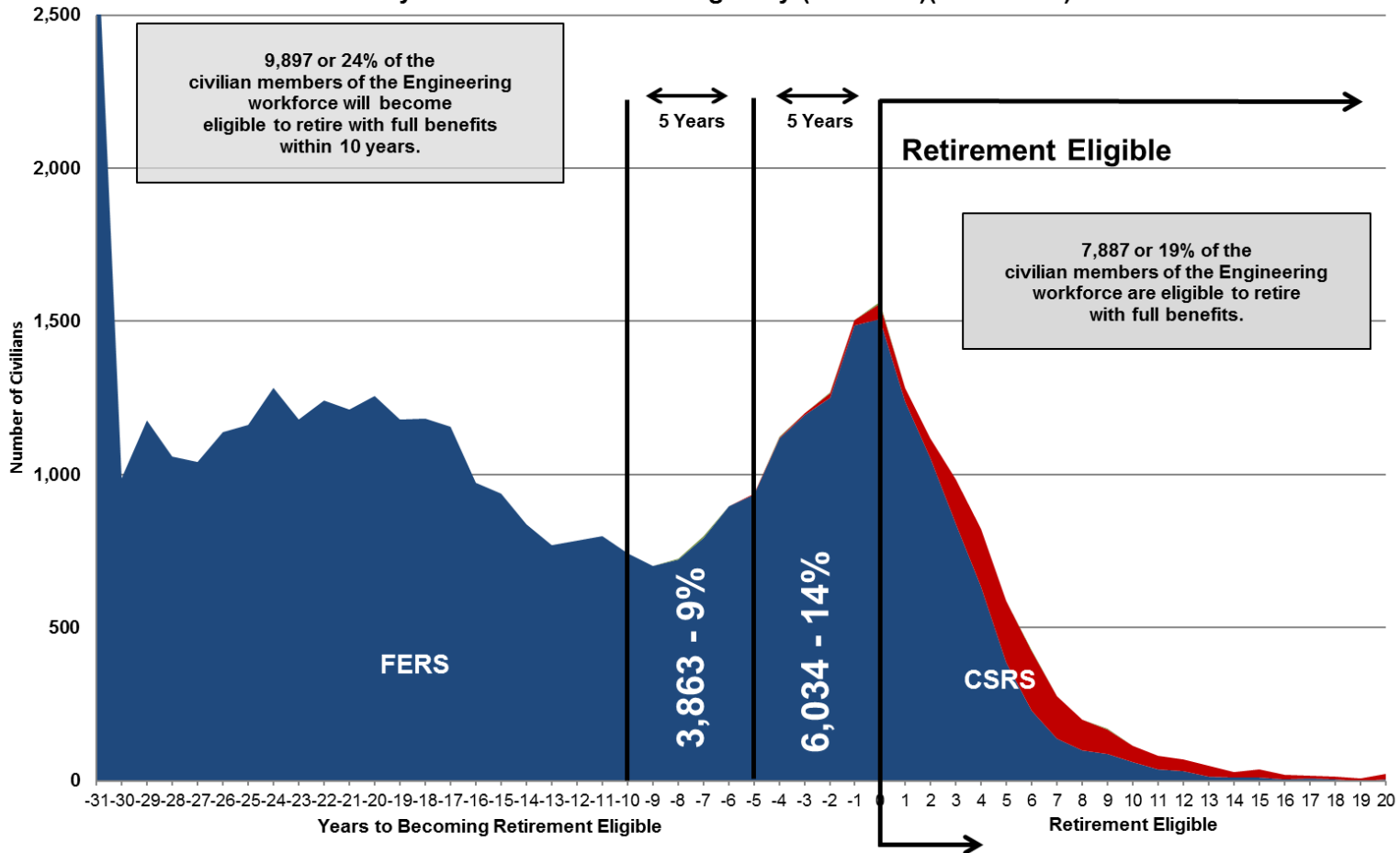


# Engineering Civilian Distribution by Years to Retirement Eligibility



## Defense Acquisition Workforce - Engineering

### Distribution by Years to Retirement Eligibility (Civilians)(FY2018Q3)



As of 30 Jun 2018



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