Life Cycle Planning Through Graphical Data Analytics

IIS GTS

Julie A Kent

May 16, 2018

Global Training Solutions

- GTS gives its global customers — particularly those in high-consequence environments — a decisive business advantage by leveraging training expertise and the latest technologies to align tailored learning and asset life-cycle solutions to their mission objectives
- Track record of increasing trainee proficiencies, improving ROI and reducing customer costs. GTS has cut an auto company's training cost by 70%, and saved the U.S. Army $400 million while training virtually every solider since 2008 on the Warfighter FOCUS IDIQ
- Provide expertise to diverse customers such as defense and military organizations, civil agencies, and commercial industry

KEY FACTS

- Training in 127 countries and in 29 languages
- Rotary and fixed wing aviation training in the Middle East and in Europe
- Virtually every U.S. Army Soldier trained since 2008
- More than 20,000 US air traffic controllers trained
- Top trainer of maintainers and operators of U.S. Army unmanned aerial systems and ISR aircraft

Industry leader in high-consequence training solutions

Warfighter FOCUS and WTA

GTS has been administering the $11.2B Army Warfighter FOCUS multiple agency, single award contract as the prime defense contractor since 2007. During this time, Raytheon has supported the training of nearly every US Army soldier, and has saved the customer $450 Million over nine years.

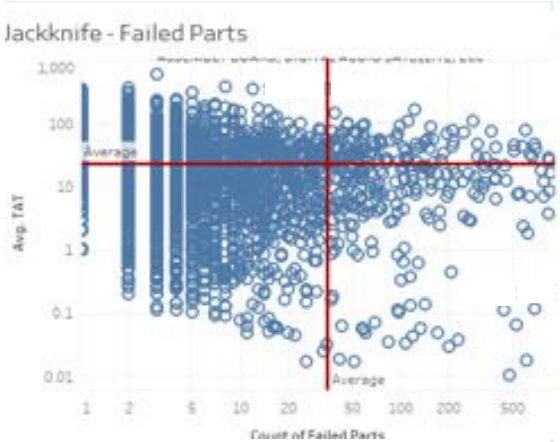
Warfighter FOCUS is operated by the Raytheon-led Warrior Training Alliance (WTA) comprised of industry leaders with highly relevant areas critical to the program's success. Operating under an open business model, the WTA delivers integrated, turnkey, life-cycle training services and support worldwide to the U.S. Army for live, virtual and constructive domains.

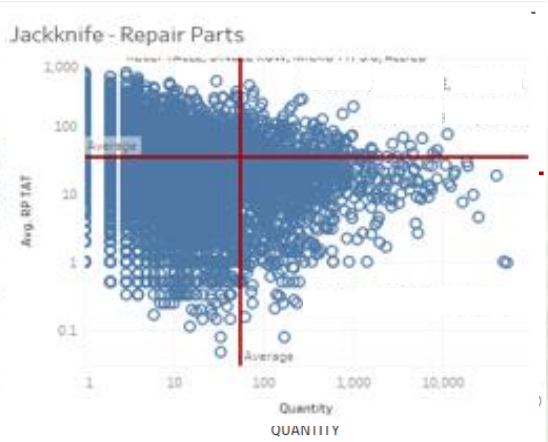
Warfighter FOCUS provides:

- Training exercise and operations
- Maintenance support for all training and range systems
- Engineering support for lifecycle support of training and range systems
- Management oversight and administrative support for teammate activities
- Supply support for all government-owned property and material
- Training infrastructure, life cycle and logistics support

GTS also organizes, manages and maintains training equipment and facilities to reduce customer costs.

WTA collects a lot of maintenance data





FP Quadrant Filter

(All)

RP Quadrant Filter

(All)

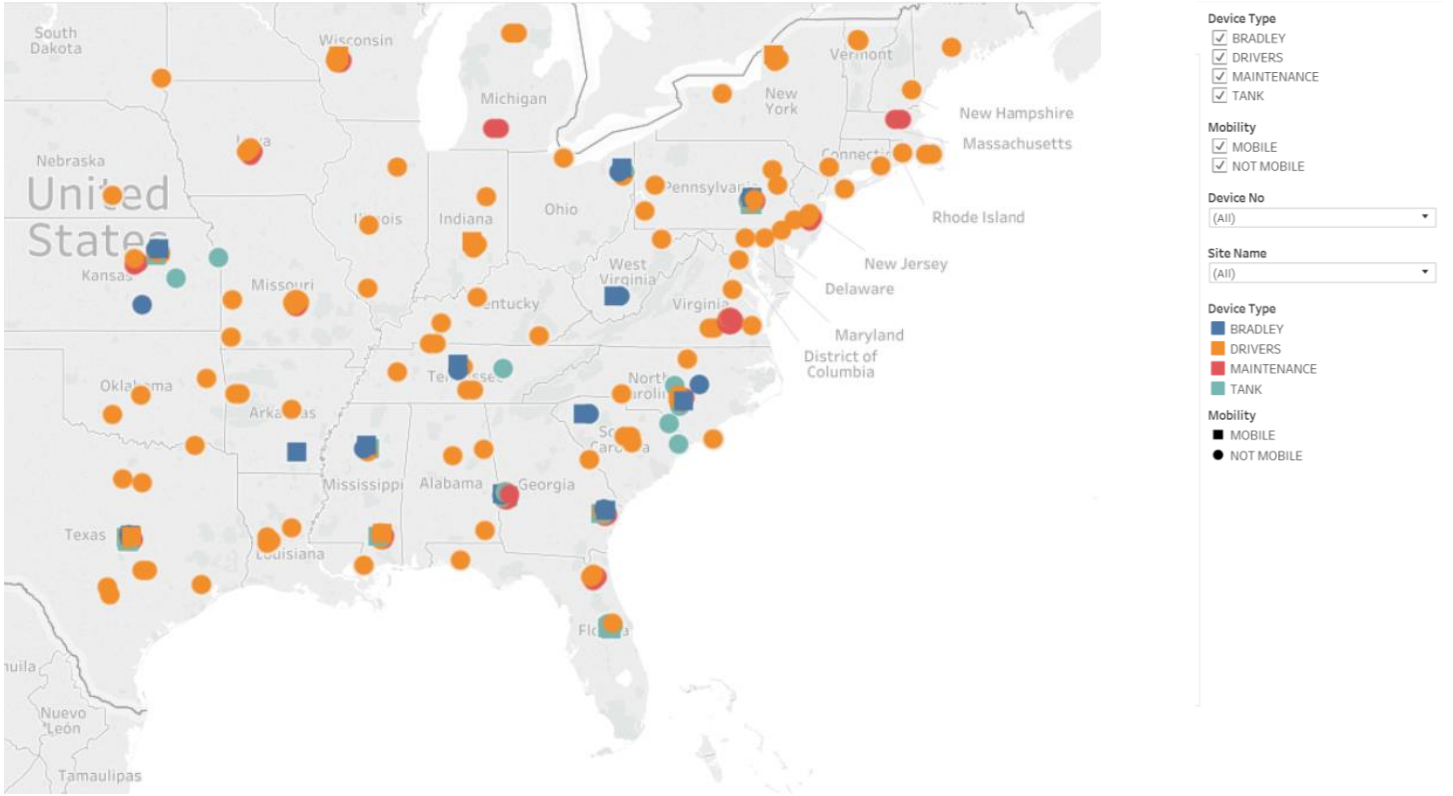
Failed Part Table

Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP11	FP DESCRIPTION _	8.12	512
FP9	FP DESCRIPTION _	30.10	227
FP12	FP DESCRIPTION _	7.27	209
FP10	FP DESCRIPTION _	71.26	157
FP23	FP DESCRIPTION _	12.37	136
FP25	FP DESCRIPTION _	28.70	129
FP18	FP DESCRIPTION _	17.70	128
FP24	FP DESCRIPTION _	30.76	91
FP8	FP DESCRIPTION _	8.61	90
FP13	FP DESCRIPTION _	8.99	79
FP7	FP DESCRIPTION _	12.31	78
FP14	FP DESCRIPTION _	26.13	45
FP22	FP DESCRIPTION	20.66	38

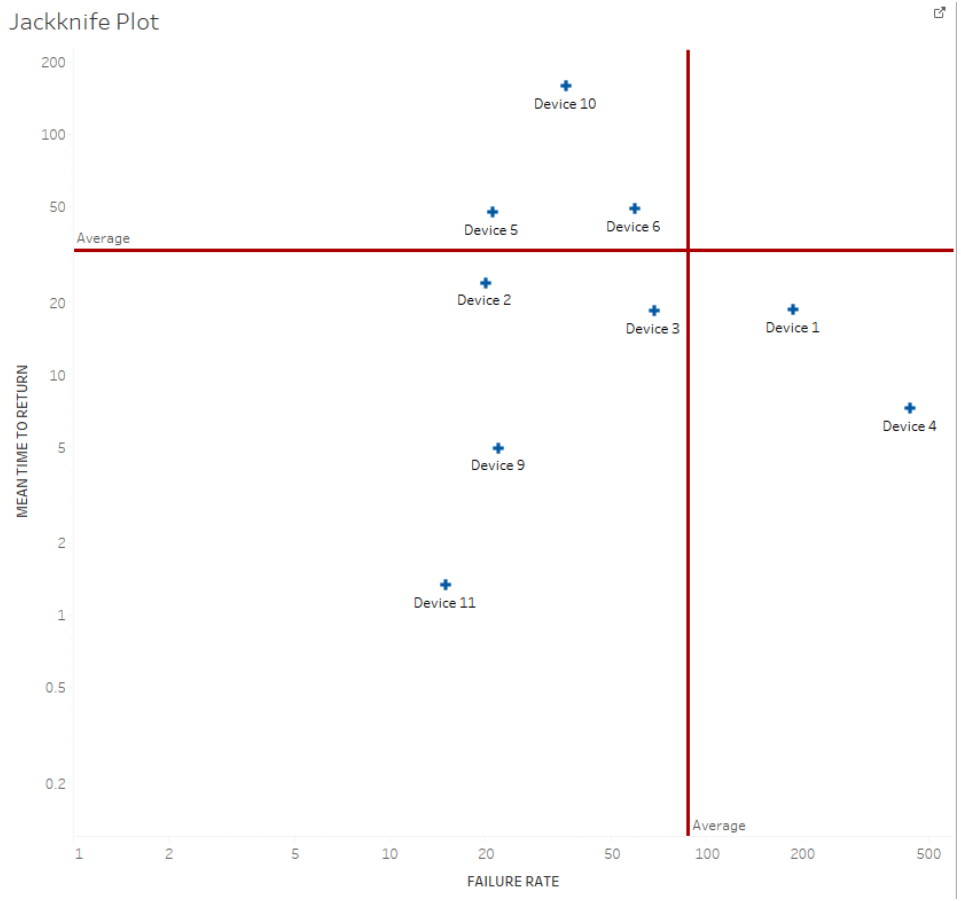
Repair Part Table

Repair Part	DESCRIPTION	Quantity
RP1	RP DESCRIPTION __	7.0
RP2	RP DESCRIPTION __	114.0
RP3	RP DESCRIPTION __	7.0
RP4	RP DESCRIPTION __	4.0
RP5	RP DESCRIPTION __	314.0
RP6	RP DESCRIPTION __	206.0
RP8	RP DESCRIPTION __	413.0
RP9	RP DESCRIPTION __	132.0
RP10	RP DESCRIPTION __	6.0
RP11	RP DESCRIPTION __	2.0
RP12	RP DESCRIPTION __	1.0
RP13	RP DESCRIPTION __	4.0

Many Devices in Many Locations



Device Failure 05/16-11/16



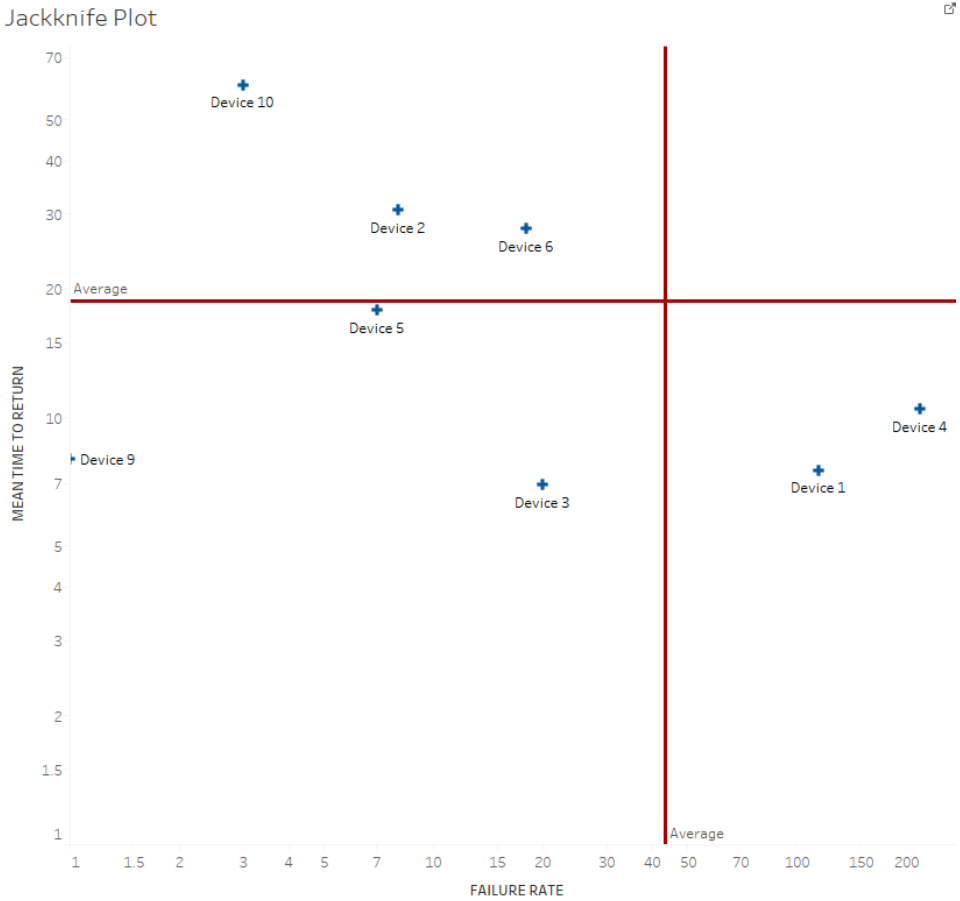
TFA
All

Sub TFA
GMDT

Workbook Device
Multiple values

Date Range
May 1, 2016 to November 1..

Device Failure 11/16-05/17



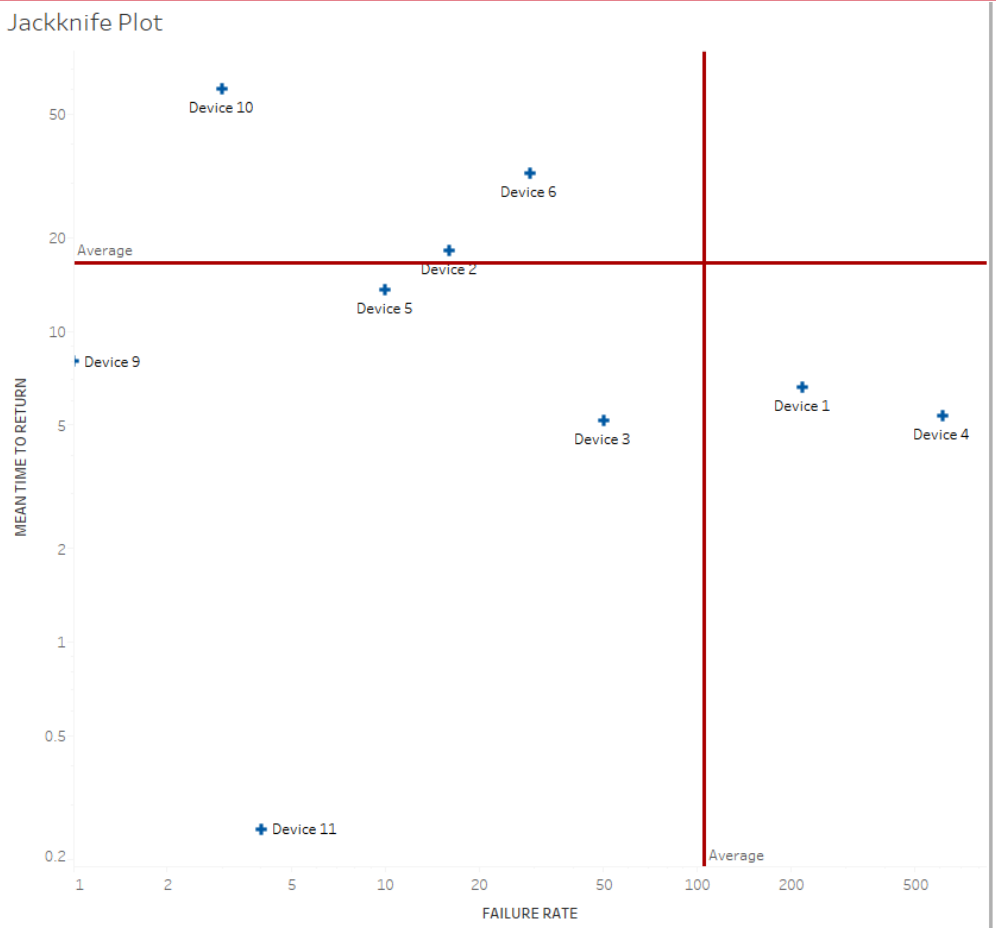
TFA
All

Sub TFA
GMDT

Workbook Device
Multiple values

Date Range
November 1, 2016 to May 1..

Device Failure 05/17-11/17



TFA
All

Sub TFA
GMDT

Workbook Device
Multiple values

Date Range
May 1, 2017 to November 1..

Details of Each Part

RP Quadrant Filter

ACUTE AND CHRONIC

Repair Part Table

Repair Part	DESCRIPTION	Quantity
RP1	RP DESCRIPTION ___	7.0
RP2	RP DESCRIPTION ___	114.0
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RP4	RP DESCRIPTION ___	4.0
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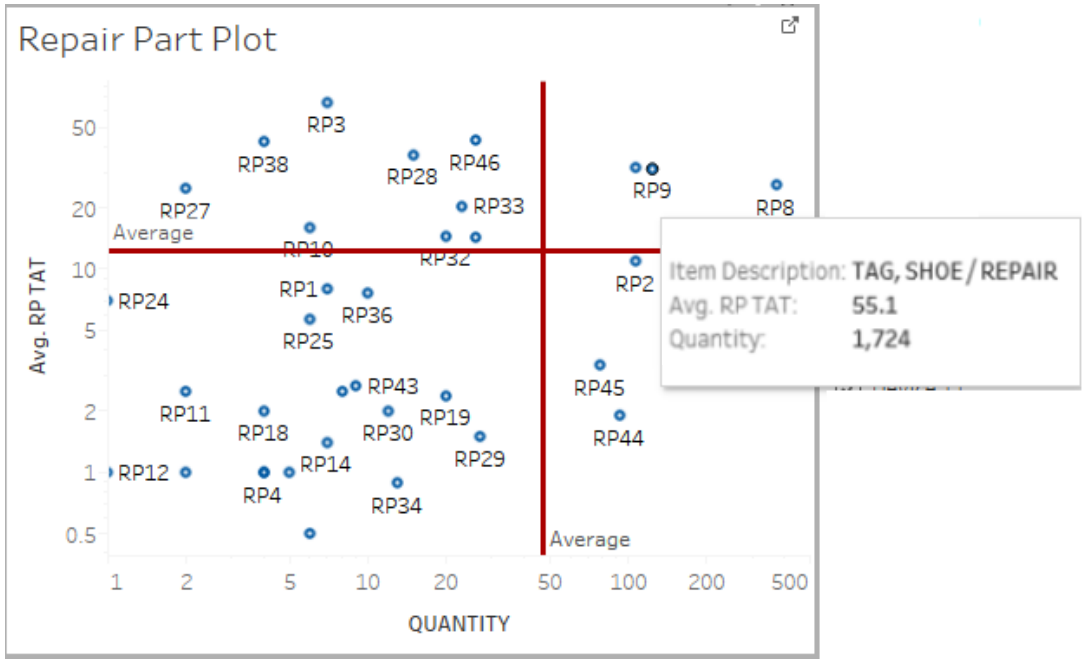
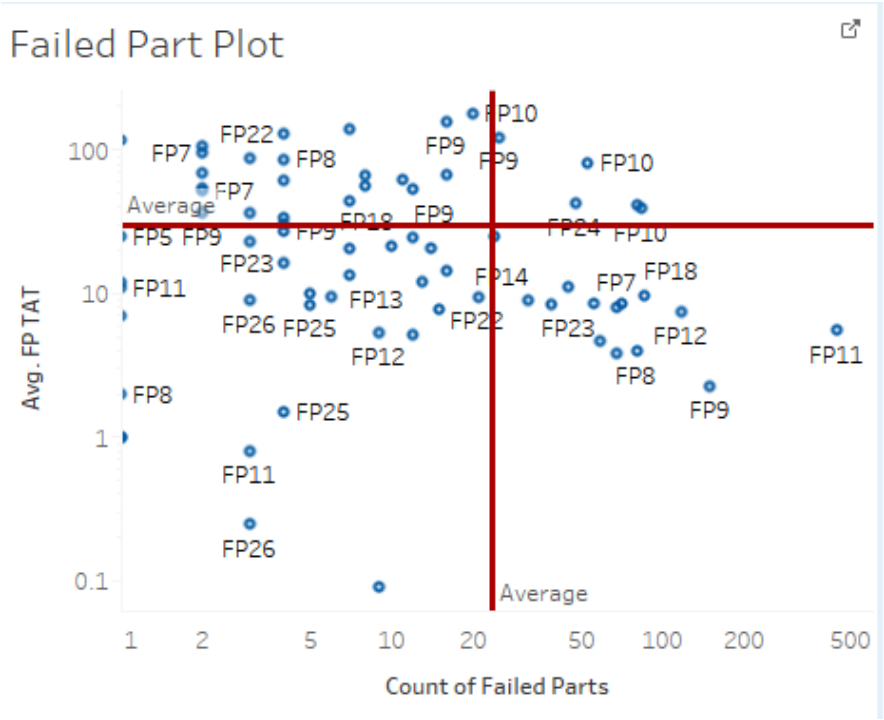
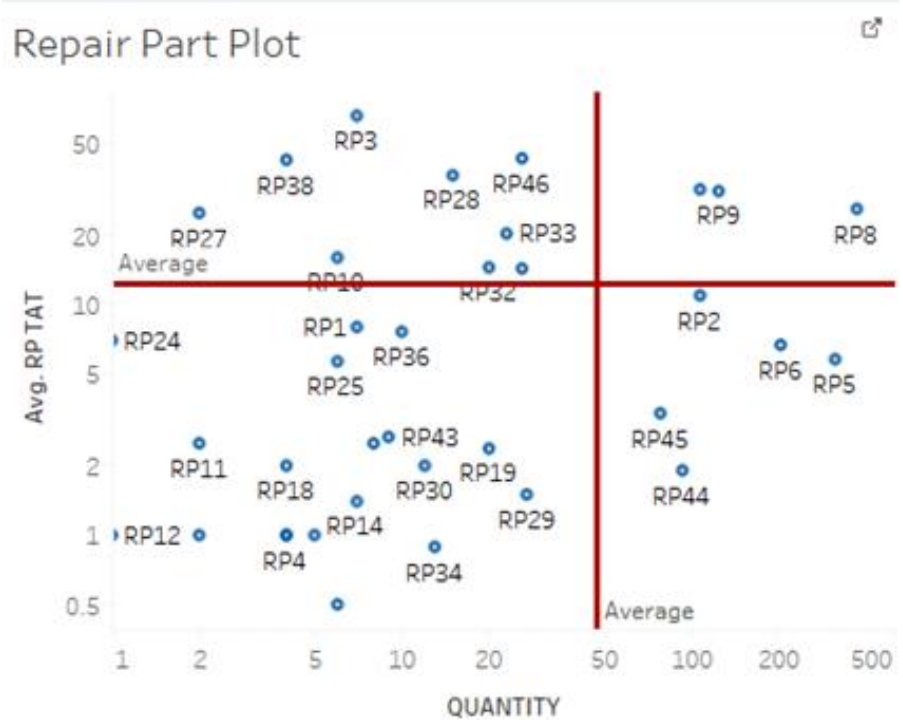
RP9	RP DESCRIPTION ___	132.0
RP10	RP DESCRIPTION ___	6.0
RP11	RP DESCRIPTION ___	2.0
RP12	RP DESCRIPTION ___	1.0
RP13	RP DESCRIPTION ___	4.0
RP14	RP DESCRIPTION ___	7.0
RP15	RP DESCRIPTION ___	5.0
RP16	RP DESCRIPTION ___	7.0



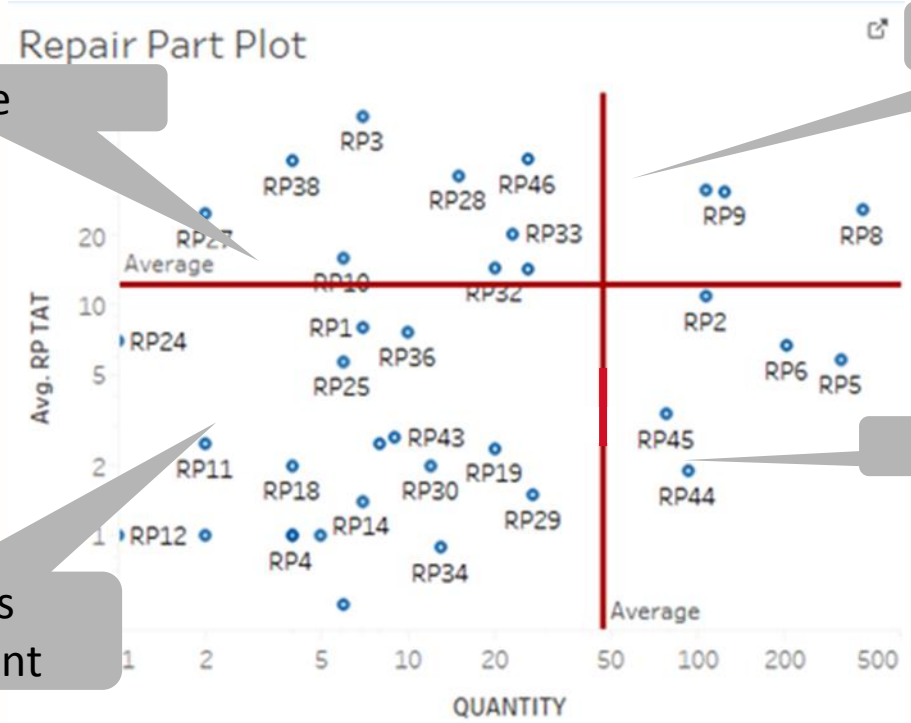
Failed and Repaired Parts by Device Type

Raytheon





Quadrants



Acute

Acute and Chronic

Chronic

Continuous Improvement

Failed Parts Detail

Raytheon

Failed Part Table

Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP11	FP DESCRIPTION _	8.12	512
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FP7	FP DESCRIPTION _	12.31	78
FP14	FP DESCRIPTION _	26.13	45
FP22	FP DESCRIPTION _	20.66	38
FP26	FP DESCRIPTION _	43.06	28
FP19	FP DESCRIPTION _	23.08	25

- Failed Parts have TAT
- Repair Parts have quantity
- WO Count are the number of work orders where that part occurs

Filter by Quadrant

FP Quadrant Filter: ACUTE

Failed Parts Detail

Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP9	FP DESCRIPTION _	95.55	30
FP10	FP DESCRIPTION _	178.35	20
FP11	FP DESCRIPTION _	67.26	18
FP18	FP DESCRIPTION _	61.83	16
FP23	FP DESCRIPTION _	61.00	13
FP14	FP DESCRIPTION _	65.31	12
FP24	FP DESCRIPTION _	42.36	10
FP12	FP DESCRIPTION _	33.00	7
FP26	FP DESCRIPTION _	139.29	7
FP22	FP DESCRIPTION _	129.50	4

FP Quadrant Filter: ACUTE AND CHRONIC

Failed Parts Detail

Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP10	FP DESCRIPTION _	56.07	137
FP25	FP DESCRIPTION _	41.30	81
FP24	FP DESCRIPTION _	42.49	48
FP9	FP DESCRIPTION _	121.50	25

FP Quadrant Filter: CONTINUOUS IMPROVEMENT

Failed Parts Detail

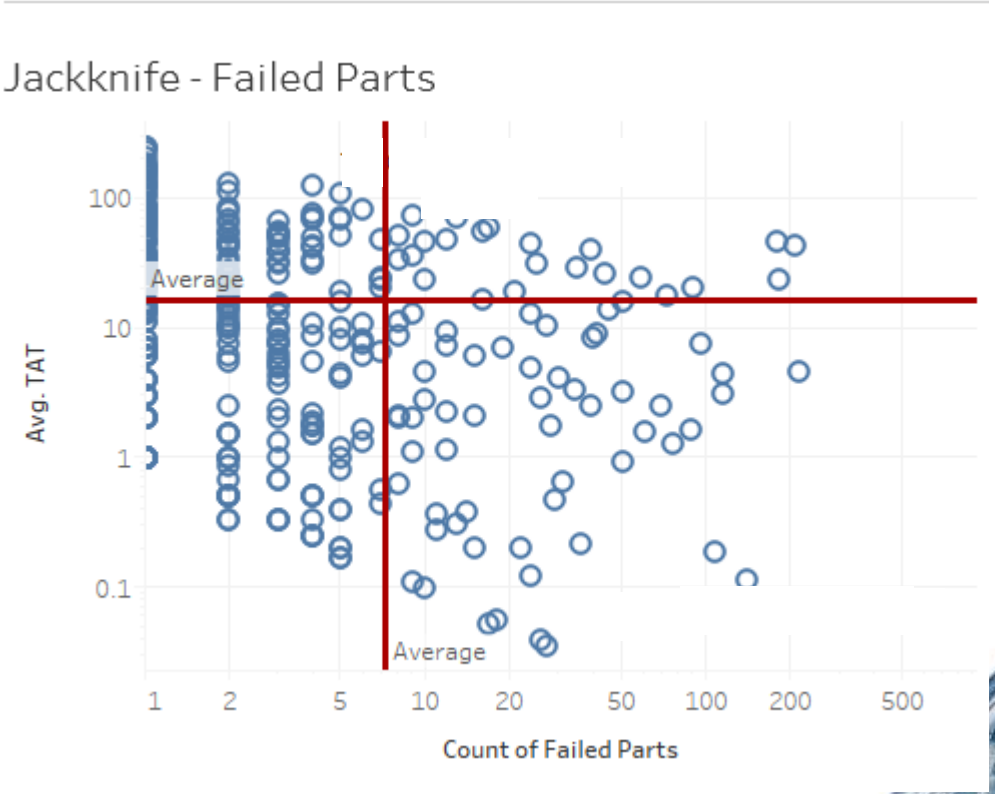
Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP24	FP DESCRIPTION _	9.69	33
FP18	FP DESCRIPTION _	17.43	26
FP26	FP DESCRIPTION _	15.00	21
FP12	FP DESCRIPTION _	12.94	16
FP9	FP DESCRIPTION _	25.37	16
FP22	FP DESCRIPTION _	5.31	13
FP20	FP DESCRIPTION _	0.09	9
FP25	FP DESCRIPTION _	5.60	9
FP13	FP DESCRIPTION _	13.25	8
FP23	FP DESCRIPTION _	18.56	7
FP21	FP DESCRIPTION _	9.50	6

FP Quadrant Filter: CHRONIC

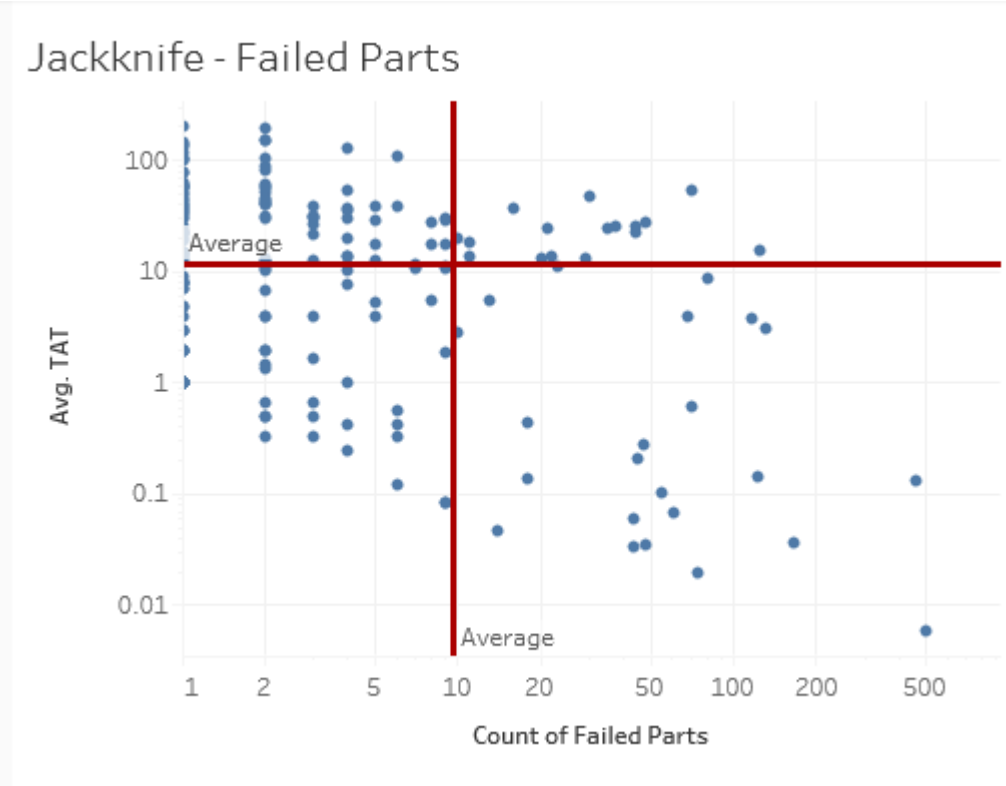
Failed Parts Detail

Failed Part	DESCRIPTION(FP)	TAT	WO Count
FP11	FP DESCRIPTION _	6.15	488
FP12	FP DESCRIPTION _	5.93	186
FP9	FP DESCRIPTION _	2.26	150
FP23	FP DESCRIPTION _	6.69	115
FP18	FP DESCRIPTION _	9.67	86
FP8	FP DESCRIPTION _	3.99	81
FP13	FP DESCRIPTION _	8.51	71
FP7	FP DESCRIPTION _	8.01	68
FP25	FP DESCRIPTION _	8.40	39
FP14	FP DESCRIPTION _	8.97	32

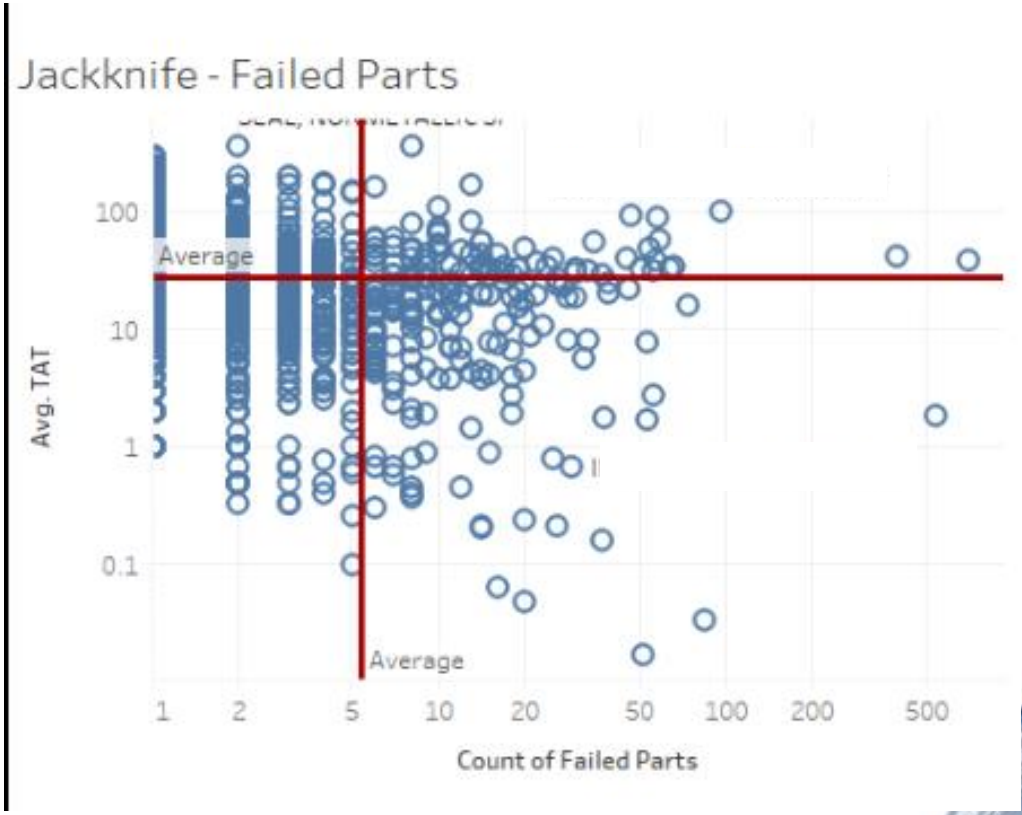
Failed Parts Device Type SRP



Failed Parts Device Type CTC



Failed Parts Device Type GMDT



Raytheon

QUESTIONS?

Julie A Kent

Julie Kent is a Sr. Principal Systems Engineer with Raytheon Company Intelligence, Information, and Services (IIS) in the Global Training Solutions (GTS) mission area. She is a systems integrator with over 20 years of experience supporting large scale, high consequence training. After integrating COTS products to create a management information system supporting cross platform work order management and life-cycle support, she has used system architecture techniques to aggregate collected information. Using collected data, Ms. Kent has been investigating patterns of usage and repair in order to locate optimal investments for life cycle funding.

1988 – BSEE Virginia Tech
1996 – MSCS UMBC
2004 – MBA U of Baltimore
Present - UCF