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353 SOG DSV, TDV, UCR 8-Step

15-19 Nov 10
18th Wing, Kadena AB, Okinawa, Japan

Approval Information/Signatures

Robert P. Toth, Col, USAF, 353 SOG/CC Date:

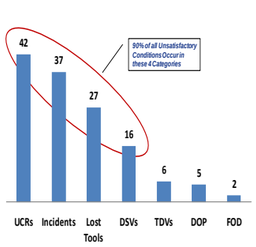
1. Clarify & Validate the Problem

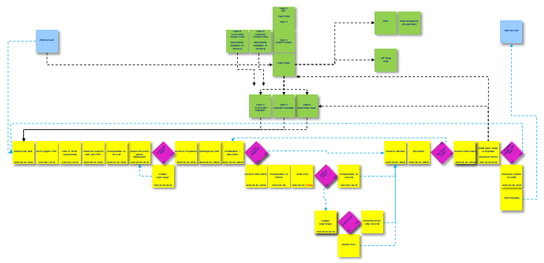
O O D A

With the recent increase in safety observations there is a fear that this indicator, along with the increase in FOD incidents, dropped objects, erratic MC rates, late take-offs, and scheduled maintenance delinquencies that a catastrophic event is imminent.

Problem Statement Clarified:

- Large amount of safety observations
- Need to minimize the multipliers that lead to unsatisfactory conditions
- High rate of DSVs, TDVs, and UCRs
- Repetitive problems and trends





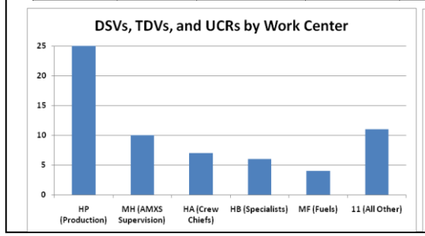
Tools Used: SIPOC, VOC, Go See/Process Walk, Pareto

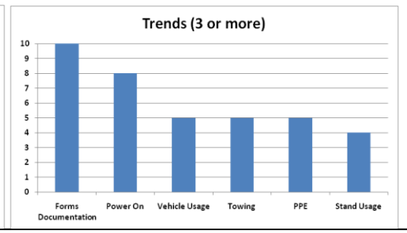
2. Break Down the Problem/Identify Performance Gaps

O O D A

	Total	Avg/Month	% of Total	Standard	Gap
DSV	16	1.3	.9%	0	16
TDV	6	.5	.3%	0	6
UCR	42	3.5	2.3%	0	42
Trends	6	n/a	n/a	0	6

Tools Used: KPI/Metrics, Gap Analysis, Bottleneck Analysis, Pareto, Checksheet, Six Sigma Levels

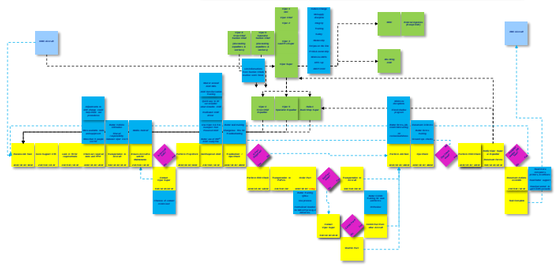




3. Set Improvement Target

O O D A

	Target	Schedule
DSV	0	3 months
TDV	0	1 month
UCR	0	6 months
Trends	0	6 months



Tools Used: Future State Map Brainstorm BSMART

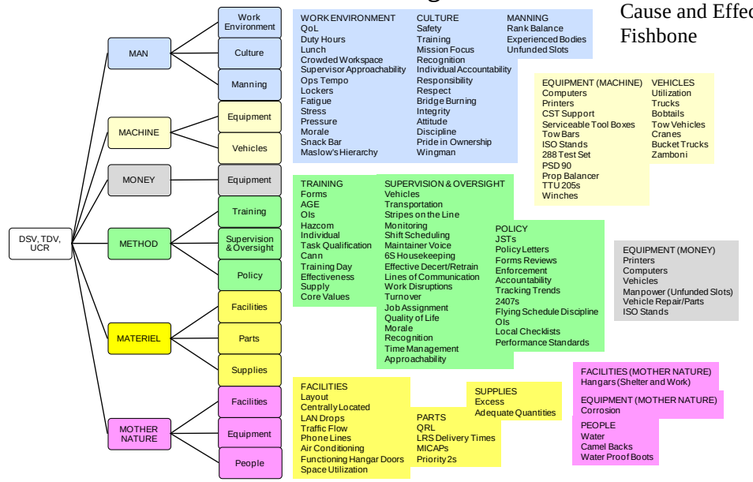
4. Determine Root Cause

O O D A

Root Causes: Ops Tempo; Supervision; Culture; Training; Personal Accountability; Quality of Life; Layout Facilities

Tools Used: Brainstorm/Affinity Cause and Effect/ Fishbone

Cause & Effect Diagram



5. Develop Countermeasures

O O D A

1. Ops Tempo
   - A. Scheduling CONOPS
   - B. Monthly Maintenance Down Day (UTE Day)
2. Supervision
   - A. Tools and Equipment
   - B. Enforce Standards
3. Culture
   - A. ICE (Comment, Feedback)
   - B. Enforce Enlisted Force Structure
   - C. Safety Mindset
   - D. Maintenance Focus Days
   - E. Awards and Recognition
4. Training
   - A. Training Day
   - B. Decertification Process
5. Personal Accountability
   - A. Hold People Accountable
6. Quality of Life
   - A. Morale Programs
   - B. Shift Scheduling
   - C. Tools and Equipment
7. Layout Facilities
   - A. Repair, Upgrade, New Construction
   - B. Centralize
   - C. Flightline and Airfield Upgrades

Line #	TASK #	SUB-TASK	TASK ELEMENT	Priority	Task Type	Metric	Task Description	Expected Outcomes / Results / Objectives / Metrics	Standardization	POC	Start Date	ECD	Status	Comments
1	1			1	PROJ	x	Track and Brief Trends	Bring back the Mongoose Monthly Daily info to Section Chief level Publish HOF data to everyone	SOG Directive	MXM Pepper				
2	2			2	PROJ	x	Stripes on the Line	Schedule of Top-4 Personnel Fill out 803s an give to MXM Brief at Daily Production Meeting	MXS Directive	MXM Pepper				
3	3			3	PROJ	x	Viper 4 and 5 Shared Responsibilities	Enforce already defined responsibilities	Track on 797	MXM Pepper				
4	4			4	PROJ	x	Meet or Exceed AGE MEL	Enforce Lima 2 usage Define AGE Contact Info Daily MEL	Status of AGE (NMC) Daily and Weekly Checklist for Supers	MXMH LeBlanc				
5	5			5	PROJ	x	Decertification Process With Follow-up Action Plan	Rewrite MXS training OI to address decerts and tracking	MXS OI, and follow 36-2201	MXMH Robertson				
6	6			6	PROJ	x	Tool and Equipment Availability	Define requirements for tools, vehicles, critical equipment, computers, printers, and computer support Work to fill needs	If no MEL, then create a local minimum level	MXMH LeBlanc				
7	7			7	PROJ	x	Plan and Manage Shift Personnel for Maximum Utilization	Standardize schedule format for the Squadron Expand existing database	MXS Directive	MXMM Wysinger				
8	8			8	RIE	x	Scheduling CONOPS	Define and Schedule an AFSO 21 Event	Determined by Event Team	MXMO Brown				
9	9			9	PROJ	x	Properly Utilize Training Days	Standardize Training Day Define Alternate Training Day Ensure training is value added Tailor training to NM drivers	Make the changes to the Training OI	MXOT Blair				

Tools Used: Brainstorm/Affinity, Action Plan, BSMART

6. See Countermeasures Through

O O D A

Tools Used: Visual Management, Standard Work, TPM, RIE

Top Level Metrics (related to this improvement effort)

- **DSV**
- **TDV**
- **UCR**
- **Trends**

Improvement Target

	Target	Schedule
DSV	0	3 months
TDV	0	1 month
UCR	0	6 months
Trends	0	6 months

Second Level Metrics

- **Stripes on the Line**
- **Viper 4 and 5 Responsibility Compliance**
- **Mongoose Monthly**
- **803s Use and Discipline**
- **Monthly HOF Data Published Squadron Wide**
- **Lima 2 Usage**
- **Meet or exceed AGE MEL**
- **Meet or exceed MEL of Locally Developed Critical Equipment Listings**
- **Supervisor Response and Actions to DSV, TDV, and UCRs**
- **Effective Use of Decert and Retrain and Compliance with AFI 36-2201**
- **Are Training Day Topics Included Training and Education on Current Trend Items, and NMCM Drivers**

7. Confirm Results & Process

O O D A

Track progress; Focus on Action Plan Key Tasks, and Critical Sustainment Tasks of Standardization Methods

Track Key Performance Indicators to Ensure Expected Outcomes and Results are Realized (See Performance Dashboard)

If not on track, find out why, and make adjustments

RESULTS	Current State	Future State	Delta	Improvement
# Steps Without Parts Order	15	15	0	**0.0%**
# Steps With Parts Order	19	19	0	**0.0%**
Min Time Without Parts Order	180 m / 3.00 h	101 m / 1.68 h	79 m / 1.32 h	**43.9%**
Avg Time Without Parts Order	350 m / 5.83 h	225 m / 3.75 h	125 m / 2.08 h	**35.7%**
Max Time Without Parts Order	2030 m / 33.83 h	1795 m / 29.92 h	235 m / 3.92 h	**11.6%**
Min Time With Parts Order	206 m / 3.43 h	127 m / 2.12 h	79 m / 1.32 h	**38.3%**
Avg Time With Parts Order	405 m / 6.75 h	280 m / 4.67 h	125 m / 2.08 h	**30.9%**
Max Time With Parts Order	5140 m / 85.67 h	3475 m / 57.92 h	1665 m / 27.75 h	**32.4%**

Tools Used: KPI/Metrics, Performance Management, Standard Work

8. Standardize Successful Processes

O O D A

Critical Sustainment Tasks

1. **Track and Brief Trends**
   - **SOG Directive**
2. **Stripes on the Line**
   - **MXS Directive**
3. **Viper 4 and 5 Shared Responsibilities**
   - **Track on 797**
4. **Meet or Exceed AGE MEL**
   - **Status of AGE (NMC) Daily and Weekly**
   - **Checklist for Supers**
5. **Decertification Process With Follow-up Action Plan**
   - **MXS Training OI**
   - **Follow 36-2201**
6. **Tool and Equipment Availability**
   - **Create a local minimum level**
7. **Plan and Manage Shift Personnel for Maximum Utilization**
   - **MXS Directive**
8. **Fix Scheduling CONOPS**
   - **(Define and Schedule an AFSO 21 Event)**
9. **Properly Utilize Training Days**
   - **Make the changes to the Training OI**

Tools Used: Standard Work Checkpoints Report Out

OODA – **O**bserve, **O**rient, **D**ecide, & **A**ct
8-Step Problem Solving Model

Air Force Problem Solving Process & Related Toolsets

Approval Information/Signatures

1. Clarify & Validate the Problem

O O D A

a. Does this problem, when solved, help meet needs identified by the organization?
   - Is it linked to the SA&D of organization?
   - Does it help satisfy customer needs (VOC)?

b. Does this problem, when solved, address key issues identified during SWOT analysis?

c. Has this problem been identified and directed by a Value Stream Map at the appropriate level?
   - What does the "Future State" need?
   - What resources have been identified to address this issue?

d. What opportunities were identified or observed by the process or problem area "walk"?
   - Will addressing or improving these issues deliver results that relate to #a or #b?
   - Will addressing or improving this problem deliver the desired future state from #c?

TOOLS: SA&D, Voice of Customer, VSM, Go & See

2. Break Down the Problem/Identify Performance Gaps

O O D A

a. Does the problem require more analysis or does leadership have enough information to execute a solution?
   - Is this simply a leadership directive?

b. If more data is needed, how do we measure performance now?
   - What are the KPIs? What is the performance gap?

c. Does other "non-existent" data need to be gathered?

d. What does the data indicate are the potential root causes?

e. Does the data review indicate a bottleneck or constraint?

TOOLS: KPI/Metrics, Performance Gap Analysis, Bottleneck Analysis

3. Set Improvement Target

O O D A

a. Is the improvement target measurable? Is it concrete? Is it challenging?

b. Is the target "Output Oriented"?
   - What is the desired output?
   - Should be "things to achieve"; should avoid "things to do"
     -- Will be addressed by Action Plans (Step 5)

c. The desired target should:
   - Do what? By how much? By when?

d. If it is a Process Problem, what is the future state?
   - How will it be realized?

TOOLS: Ideal State, Future State Mapping, SMART

4. Determine Root Cause

O O D A

a. What root cause analysis tools are necessary?
   - Why are these tools necessary?
   - What benefit will be gained by using them?
   - Who will need to be involved in the root cause analysis?
     -- 10 heads are better than one
     -- Remember "cultural" issues related to problem

b. What is (are) the root cause(s) according to the tools?

c. How will the root cause be addressed?

d. Will addressing these address the performance gap?

e. Can the problem be turned on or off by addressing the root cause?

f. Does the root cause make sense if the 5 Whys are worked in reverse?
   - Working in reverse, say "therefore" between each of the "whys"

TOOLS: 5 Whys, Brainstorming, Pareto, Affinity, Fishbone, Control Charts

5. Develop Countermeasures

O O D A

a. Develop potential countermeasures
   - Tools and philosophies from Lean, TOC, 6 Sigma and BPR as appropriate

b. Select the most practical and effective countermeasures

c. Build consensus with others by involving all stakeholders appropriately
   - Communicate, communicate, communicate

d. Create clear and detailed action plan
   - SMART actions
   - Reference Facilitation Techniques as appropriate

TOOLS: A3, Action Plans, Timelines, FM Tool

6. See Countermeasures Through

O O D A

a. Which philosophy best prescribes tools that address root cause(s)?

b. Which tools best address root cause(s)?

c. Which method for implementation fits the tool and improvement need?
   - Rapid Improvement Event?
   - Improvement Project?
   - Point Improvement or "Just Do It"?

d. If RIE or Project, create "Charter" and communicate

e. What training or education is needed? By Whom?

TOOLS: 6S & Visual Mgt, Standard Work, Cell Design, Variation Reduction, Error Proofing, Quick Changeover, TPM, RIE

7. Confirm Results & Process

O O D A

a. How are we performing relative to the Observe phase (Steps 1 & 2)?

b. How are we performing relative to Step 3?

c. How are we performing relative to FM Tool projections?

d. If we are not meeting targets, do we need to return to Step 4?
   - Most problem solving "breakdowns" occur relative to improper root cause identification

TOOLS: KPIs/Metrics, Performance Mgt, SA&D, Standard Work, Audit

8. Standardize Successful Processes

O O D A

a. What is needed to Standardize Improvements?
   - Tech Order changes?
   - Air Force Instruction changes?
   - Official Instruction changes?

b. How should improvements and lessons learned be communicated?
   - PowerSteering
   - Key meetings?

c. Were other opportunities or problems identified by the Problem Solving Process?
   - Restart OODA Loop

TOOLS: Checkpoints/Standardization Table, Report Out Theme Story, Broad Implementation, CPI Mgt Tool