How to Layered Process Audit

Background

Layered Process Audit Basics

- LPA system should have a formal written procedure, part of your Quality Management System
- LPA Checklist creation/revision is integrated into planning & corrective action processes
- What gets measured gets action:
  - Monitor/Chart LPA audits completed vs planned
  - Make it part of the operations goal
  - Monitor/Chart Conformance Rate from audit results

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Layered Process Audit Basics

- The LPA system should be in real time and acted on promptly
  - Immediate containment, Using predefined reaction plan.
  - Non-conformance triggers corrective action process
  - Failure to comply with audit schedule triggers action
  - Customer complaints and Internal rejections trigger updates to LPA questions
  - New Products , process changes trigger updates

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Where to Focus the Layered Process Audits

- Focus on high risk areas
  - Prior causes of rejections
  - Process FMEA RPN
  - New Product
  - Process Changes
    - After implementing corrective action
  - Validate error proofing is functioning
  - Key processes
  - People who are new to the job

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Why do Layered Process Audits ?

- To reinforce training with new employees
- To lock in process changes
- To reinforce the need to follow the process control plan and manufacturing procedures
  - It is Human nature:
    - Employees do not read the procedure/instructions every time they process parts, they often operate by memory.
    - When a process is changed, employees must relearn the process. LPA reinforces a process change so that they do not revert back to the old way.

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Example of Auditors and Audit Frequency

Layer	Job Title	Audit Frequency, Minimum	# Areas, Shifts	#Audits per Week (Minimum)
1st	Maintenance Supervisors	1 per shift	2 Areas, 3 Shifts	6
1st	Operations Supervisors	1 per shift	10 Areas, 3 Shifts	30
2nd	Operations Superintendents	1 per week per shift	2 Divisions, 3 Shifts	6
3rd	Plant Manager	1 per week, rotate area/ shifts	1	1
3rd	Quality Manager	1 per week, rotate area/ shifts	1	1
3rd	Manufacturing Engineering Manager	1 per week, rotate area/ shifts	1	1
1st	Manufacturing and Quality Engineers	1 per week per area/ rotate shifts	12 Areas, 3 Shifts	12
			Weekly Total:	57

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Layered Process Audit –What if Not effective?

- After 2-3 months, assess the LPA process
- Is LPA having the desired effect?
  - Internal scrap and rework down?
  - More standard work created, less variation in manual processes?
  - Fewer customer complaints and rejections?
- What could be wrong?

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Layered Process Audit Tools

- LPA Audit Form – LPA1
- LPA Planning Tool
- LPA Database [Register and Reports]

Layered Process Audit Form

The LPA Audit Form

Focused on 10 Generic areas – within which a range of questions is tailored to the AREA being audited.

1. There are 10 Generic Audit Topics, within which questions tailored to the area being audited have been developed.
2. The audit timeline is around 30 minutes.
3. Questions are designed to operate at a yes no level only.
4. Completed and signed forms should be returned to the LPA Administrator [Mike Woodall].
5. The responses will be translated into 1,s and -1 for yes and no respectively and entered into the LPA database.
6. The scoring of the audit is based on the number “Y”’s devided by 10 – i.e. the maximum score, expressed as a percentage.

The form uses the area input to lookup questions tailored to the AREA being Audited.

Area Specific Questions are looked up from the ASQ Matrix set out on the next slide.

Example ‘scored’ form to follow

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Layered Process Audit Sheet

C:\Holding 2\Layered Process Audits\[FUKL Layered Process Audits R1V5 17 Mar 17.xlsx]Form

LPA NO		PART NUMBER		PLANNED AUDIT DATE:	
AREA	Welding	CUSTOMER		ACTUAL AUDIT DATE:	
UNIT:		OPERATOR		AUDITOR	

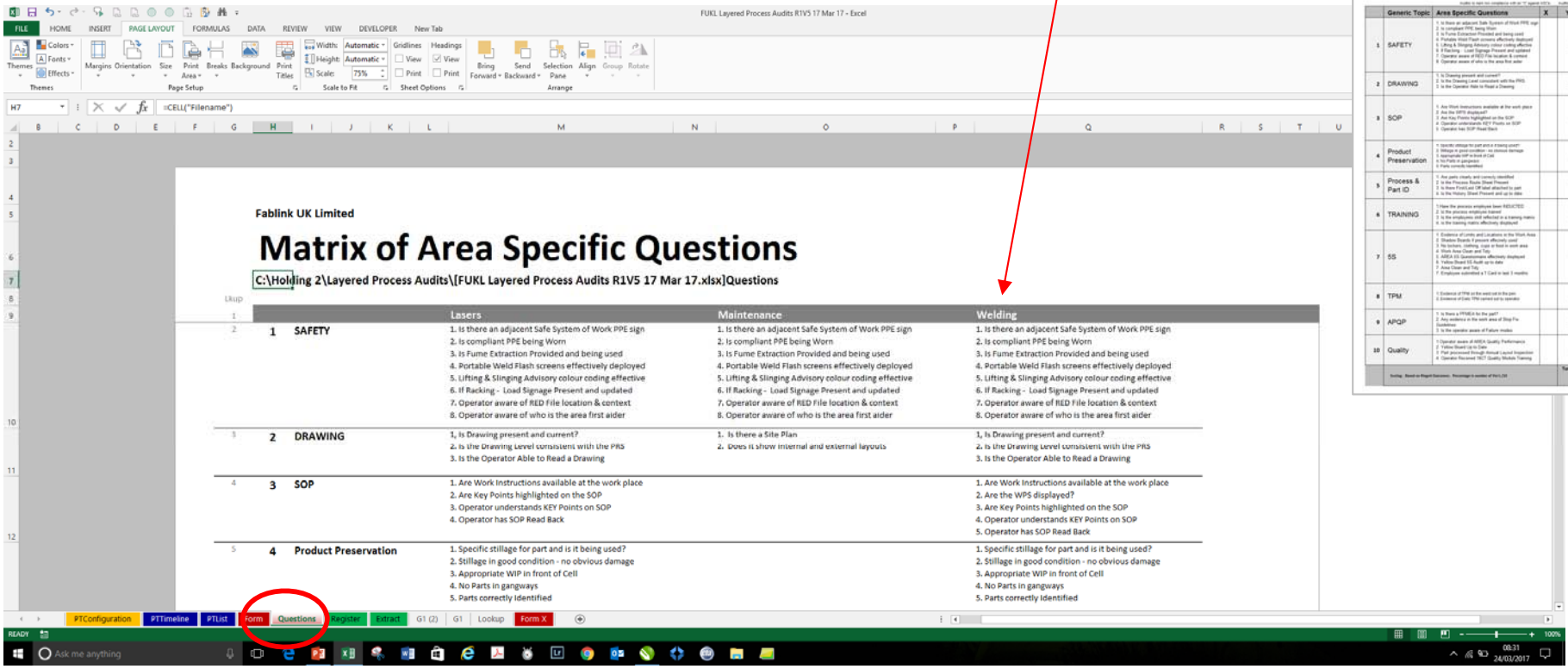
Auditor to mark non compliance with an "X" against ASC's. Auditor to ring in red 1 or zero - i.e. yes/no [yes= no "X's"]

	Generic Topic	Area Specific Questions	X	Y	N	Comment
1	SAFETY	1. Is there an adjacent Safe System of Work PPE sign 2. Is compliant PPE being Worn 3. Is Fume Extraction Provided and being used 4. Portable Weld Flash screens effectively deployed 5. Lifting & Slinging Advisory colour coding effective 6. If Racking - Load Signage Present and updated 7. Operator aware of RED File location & context 8. Operator aware of who is the area first aider		1	-1	
2	DRAWING	1. Is Drawing present and current? 2. Is the Drawing Level consistent with the PRS 3. Is the Operator Able to Read a Drawing		1	-1	
3	SOP	1. Are Work Instructions available at the work place 2. Are the WPS displayed? 3. Are Key Points highlighted on the SOP 4. Operator understands KEY Points on SOP 5. Operator has SOP Read Back		1	-1	
4	Product Preservation	1. Specific stillage for part and is it being used? 2. Stillage in good condition - no obvious damage 3. Appropriate WIP in front of Cell 4. No Parts in gangways 5. Parts correctly Identified		1	-1	
5	Process & Part ID	1. Are parts clearly and correcly identified 2. Is the Process Route Sheet Present 3. Is there First/Last Off label attached to part 4. Is the History Sheet Present and up to date		1	-1	
6	TRAINING	1.Have the process employee been INDUCTED 2. Is the process employee trained 3. Is the employees skill reflected in a training matrix 4. is the training matrix effectively displayed		1	-1	
7	5S	1. Evidence of Limits and Locations in the Work Area 2. Shadow Boards if present effecively used 3. No lockers, clothing, cups or food in work area 4. Work Area Clean and Tidy 5. AREA 5S Questionnaire effectively displayed 6. Yellow Board 5S Audit up to date 7. Area Clean and Tidy 7. Employee submitted a T Card in last 3 months		1	-1	
8	TPM	1. Evidence of TPM on the weld set in the pen 2. Evidence of Daily TPM carried out by operator		1	-1	
9	APQP	1. Is there a PFMEA for the part? 2. Any evidence in the work area of Stop Fix Guidelines 3. Is the operator aware of Failure modes		1	-1	
10	Quality	1.Operator aware of AREA Quality Performance 2. Yellow Board Up to Date 3. Part processed through Annual Layout Inspection 4. Operator Received 16CT Quality Module Training		1	-1	
	Scoring - Based on Ringed Outcomes: Percentage is number of Yes's /10			Total	Total	Percentage

The LPA Audit Form

Area Specific Questions are maintained by LPA System Administrator

The System uses Horizontal Lookup to import the Area Specific Questions..



The Worksheet containing this matrix.

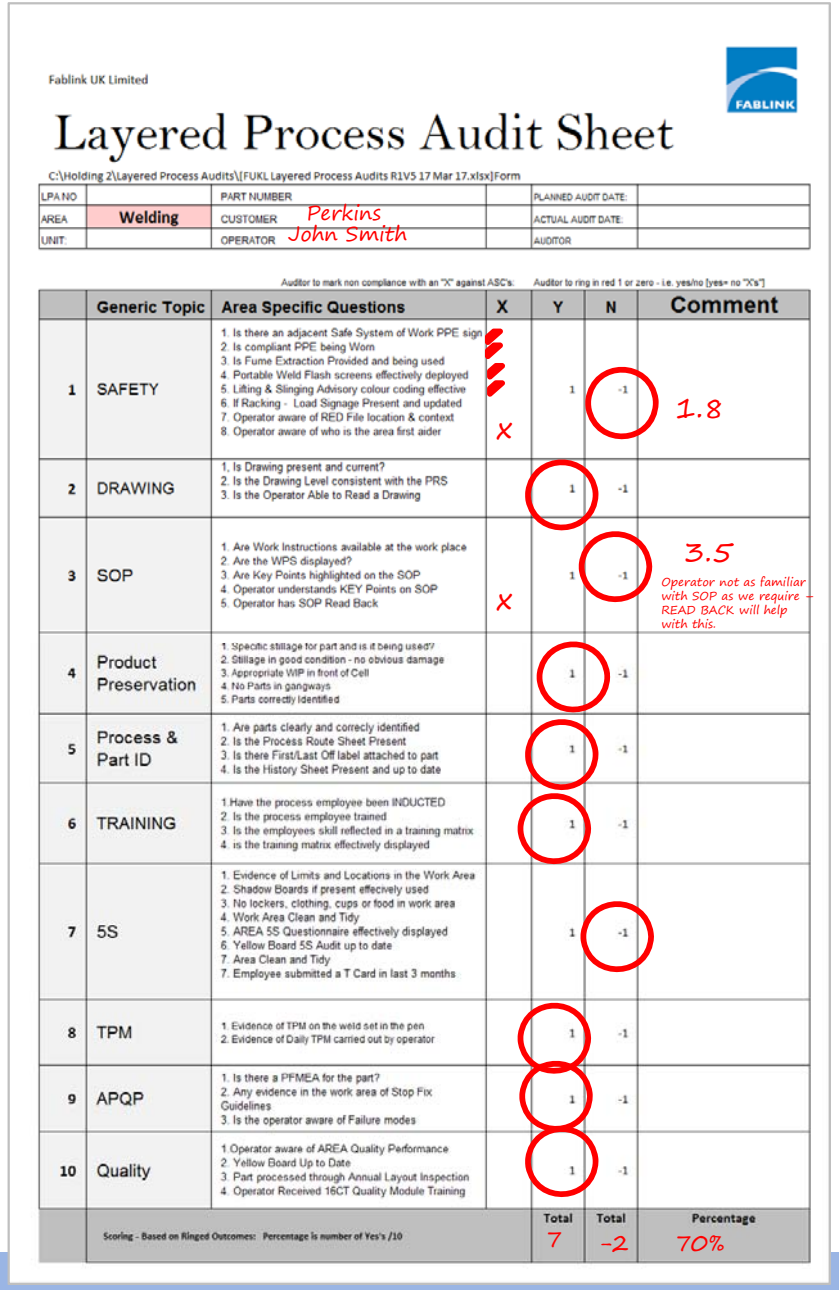
The LPA Audit Form

A Worked Example

1. The Audit Form comprises observational questions which can be completed by the auditor quickly without the involvement of the operator and those based directly on operator involvement and responses.

2. This example shows an 80% score with 2 Non Compliant Generic Topics,

3. The specific non compliances are flagged with an “X” referred to by Topic and Question number and the subject of a brief comment by the auditor.



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Layered Process Audit Sheet

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LPA NO		PART NUMBER		PLANNED AUDIT DATE:	
AREA	Welding	CUSTOMER	Perkins	ACTUAL AUDIT DATE:	
UNIT:		OPERATOR	John Smith	AUDITOR	

Auditor to mark non compliance with an "X" against ASC's. Auditor to ring in red 1 or zero - i.e. yes/no [yes= no "X's"]

	Generic Topic	Area Specific Questions	X	Y	N	Comment
1	SAFETY	1. Is there an adjacent Safe System of Work PPE sign 2. Is compliant PPE being Worn 3. Is Fume Extraction Provided and being used 4. Portable Weld Flash screens effectively deployed 5. Lifting & Slinging Advisory colour coding effective 6. If Racking - Load Signage Present and updated 7. Operator aware of RED File location & context 8. Operator aware of who is the area first aider	X	1	-1	1.8
2	DRAWING	1. Is Drawing present and current? 2. Is the Drawing Level consistent with the PRS 3. Is the Operator Able to Read a Drawing		1	-1	
3	SOP	1. Are Work Instructions available at the work place 2. Are the WPS displayed? 3. Are Key Points highlighted on the SOP 4. Operator understands KEY Points on SOP 5. Operator has SOP Read Back	X	1	-1	3.5 Operator not as familiar with SOP as we require - READ BACK will help with this.
4	Product Preservation	1. Specific stillage for part and is it being used? 2. Stillage in good condition - no obvious damage 3. Appropriate WIP in front of Cell 4. No Parts in gangways 5. Parts correctly Identified		1	-1	
5	Process & Part ID	1. Are parts clearly and correcly identified 2. Is the Process Route Sheet Present 3. Is there First/Last Off label attached to part 4. Is the History Sheet Present and up to date		1	-1	
6	TRAINING	1.Have the process employee been INDUCTED 2. Is the process employee trained 3. Is the employees skill reflected in a training matrix 4. is the training matrix effectively displayed		1	-1	
7	5S	1. Evidence of Limits and Locations in the Work Area 2. Shadow Boards if present effecively used 3. No lockers, clothing, cups or food in work area 4. Work Area Clean and Tidy 5. AREA 5S Questionnaire effectively displayed 6. Yellow Board 5S Audit up to date 7. Area Clean and Tidy 7. Employee submitted a T Card in last 3 months		1	-1	
8	TPM	1. Evidence of TPM on the weld set in the pen 2. Evidence of Daily TPM carried out by operator		1	-1	
9	APQP	1. Is there a PFMEA for the part? 2. Any evidence in the work area of Stop Fix Guidelines 3. Is the operator aware of Failure modes		1	-1	
10	Quality	1.Operator aware of AREA Quality Performance 2. Yellow Board Up to Date 3. Part processed through Annual Layout Inspection 4. Operator Received 16CT Quality Module Training		1	-1	
	Scoring - Based on Ringed Outcomes: Percentage is number of Yes's /10			Total 7	Total -2	Percentage 70%

The LPA Audit Form - Outcomes

Return completed forms to the LPA Administrator

Audit Scores input to the Register - 1 and 1's. as well as a note of the REFERENCE CODE for the failure mode.

1. Return the completed Audit Form to MIKE WOODALL the LPA Audit Administrator who will update the LPA Register.

2. More on this later!

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LPA Register

Enter 1,0,-1

								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Actual	Month	Planning Tool Date	Area	Area No	No	Auditor	Operator	Is Safety Eqpt being worn	Is Process Route Sheet Present?	Is Drawing present and current?	Drawing Issue Level vs PRS	adequate Work Instructions	specific stillage for part and is it	First/Last Off label attached to part?	operator trained? Check against	History Sheet present and up to	5S Audit	Parts Identification	Is the TPM Sheet up to date?	Is there a PFMEA for the part?	Is there a Control Plan for the part?	Is there a Process Flow for the part?	Total	Total
02-Mar-17	Mar-17	01-Mar-17	Press Brakes	2	5	Glyn Dickens	xx	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	12	**80.0%**
03-Mar-17	Mar-17	01-Mar-17	Press Brakes	2	4	Bill Williams	xx	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	9	**60.0%**
04-Mar-17	Mar-17	01-Mar-17	Lasers	1	6	Paul Nock	xx	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	**100.0%**
128,391		**128,385**						**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**1**	**36**	
	LateDays	**-6**						**100%**	**100%**	**100%**	**100%**	**67%**	**67%**	**67%**	**67%**	**67%**	**100%**	**100%**	**100%**	**67%**	**67%**	**33%**	**80%**	**87%**
	AVLD	**- 2**																						

Layered Process Planning Tool

Planning Tool Configuration 1

Defining Areas and Audit Frequencies

Table 1 Number of LPA's a week [Area by Shift pattern Rule]

Creates a rule for Audit point timeline

1	2	3	4	5	6	7	8=[6*7]	[5/8]	User Configures Weekly Profile of daily audits					
Area No	Processes	ABBREV	UOA	Units	Area	Shifts	Weekly Audits	Audit Cycle	Mon	Tue	Wed	Thu	Fri	
1	Lasers	LAS	Machines	5	1	3	3	1.7 wks	1	1	1	0	0	ok
2	Turrets	TUR	Machines	2	1	1	1	2.0 wks	0	1	0	0	0	ok
3	Press Brakes	PBR	Machines	7	1	2	2	3.5 wks	0	0	1	1	0	ok
4	Heavy Press	HPR	Machines	5	1	2	2	2.5 wks	1	0	0	0	1	ok
5	Light Press	LPR	Machines	11	1	2	2	5.5 wks	0	1	0	1	0	ok
6	Kitting	KIT	Areas	6	1	2	2	3.0 wks	1	0	1	0	0	ok
7	Manual Weld	MWE	Pens	25	1	2	2	12.5 wks	1	0	0	0	1	ok
8	Robot Weld	RWE	Machines	5	1	2	2	2.5 wks	0	1	0	1	0	ok
9	Warehousing	WHO	Areas	6	1	2	2	3.0 wks	0	1	1	0	0	ok
10	Inspection	INS	Audits	5	1	2	2	2.5 wks	0	0	1	1	0	ok
10				**77**			**20**		**4**	**5**	**5**	**4**	**2**	ok

Uneven distribution of Audit Cycles

Alternative Approach

Table 2 Number of LPA's a week - enforcing 5 week Audit Cycle for all Areas

1	2	3	4	5	6	7	8=[6*7]	[5/8]	User Configures Weekly Profile of daily audits					
Area No	Processes	ABBREV	UOM	Audit Points	Area	Shifts	Weekly Audits	Audit Cycle	Mon	Tue	Wed	Thu	Fri	
1	Lasers	LAS	Machines	5	1	3	1.0	5.0 wks	1	0	0	0	0	ok
2	Turrets	TUR	Machines	2	1	1	1.0	5.0 wks	0	1	0	0	0	ok
3	Press Brakes	PBR	Machines	7	1	2	1.0	5.0 wks	0	0	1	0	0	ok
4	Heavy Press	HPR	Machines	5	1	2	1.0	5.0 wks	0	0	0	0	1	ok
5	Light Press	LPR	Machines	11	1	2	2.0	5.0 wks	1	0	0	1	0	ok
6	Kitting	KIT	Areas	6	1	2	1.0	5.0 wks	0	1	0	0	0	ok
7	Manual Weld	MWE	Pens	25	1	3	5.0	5.0 wks	1	1	1	1	1	ok
8	Robot Weld	RWE	Machines	5	1	2	1.0	5.0 wks	1	0	0	0	0	ok
9	Warehousing	WHO	Areas	6	1	2	1.0	5.0 wks	0	0	1	0	0	ok
10	Inspection	INS	Areas	5	1	1	1.0	5.0 wks	0	0	0	1	0	ok
10				**77**			**15**		**4**	**3**	**3**	**3**	**2**	ok
									Daytype	1	2	3	4	5

Rounds up!

Two alternative Regimes Considered

1. Looks at Areas and numbers of audit points in each area – i.e. the Lasers are one area with five audit points – each of which will be allocated a number 1-5.

2. On this basis, we have identified 10 areas [we are focused on manufacturing processes only at this juncture].

3. Using this structured approach, there are 66 Audit points carried forward into the LPA Planning Tool.

4. The Planning Tool requires a definition of which days audits will be carried out on – [converts to a day type] so that Audit Hits along a timeline can be calculated.

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Planning Tool Configuration 2

Defining the Audit Points

Table 3 Audit Points Defined [Area by Unit of Audit]

1	2	3	5	6	7	
Area No	Processes	ABBREV	AuditPoint	Unit No	TAG	Detail
1	Lasers	LAS	Machines	1	1LAS1	4030
1	Lasers	LAS	Machines	2	1LAS2	4050
1	Lasers	LAS	Machines	3	1LAS3	4050
1	Lasers	LAS	Machines	4	1LAS4	3030
1	Lasers	LAS	Machines	5	1LAS5	3030
2	Turrets	TUR	Machines	1	2TUR1	-
2	Turrets	TUR	Machines	2	2TUR2	-
3	Press Brakes	PBR	Machines	1	3PBR1	-
3	Press Brakes	PBR	Machines	2	3PBR2	100T Amada
3	Press Brakes	PBR	Machines	3	3PBR3	200T Amada
3	Press Brakes	PBR	Machines	4	3PBR4	-
3	Press Brakes	PBR	Machines	5	3PBR5	-
4	Heavy Press	HPR	Machines	1	4HPR1	-
4	Heavy Press	HPR	Machines	2	4HPR2	-
10	Inspection	INS	Areas	2	10INS2	Leyland
10	Inspection	INS	Areas	3	10INS3	Perkins
10	Inspection	INS	Areas	4	10INS4	CAT
10	Inspection	INS	Areas	5	10INS5	JCB

66

We are starting to create an audit record by creating an part 1 of the audit tag.

1. Area number, Abbreviated description and audit point number are concatenated to create an audit tag used later in the LPA planning tool.

2. The detailed table aligns with the control total in table 2 – i.e. there are 66 Audit Points relating to manufacturing operations in the LPA Planning tool.

Planning Tool - Structured Signage

Identifies all Audit points in the Business

1. Very Good Value!

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Planning Tool Configuration 3

Structuring the Audit Team

Table 4 Audit Team

1							
1	2	3	4	5	6	7	
AuditorID	Name	ABBREV		Level 1	Level 2	Level3	
1	Mike Singleton	MAS	Standard	1	0	0	ok
2	Stuart Knight	DSE	Standard	0	1	0	ok
3	John Butler	JBU	Standard	0	1	0	ok
4	Glyn Dickens	PBR	Standard	0	1	0	ok
5	Ian Marshall	IMA	Standard	0	1	0	ok
6	Paul Nock	PNO	Standard	0	0	1	ok
7	Bill Williams	BWI	Standard	0	0	1	ok
8	Carl Hesson	CHE	Standard	0	0	1	ok
9	Dave Keats	DKE	Standard	0	0	1	ok
10	Len Raby	LRA	Standard	0	0	1	ok
11	Dave Evans	DEV	Standard	0	0	1	ok
12	Gavin Smith	GSM	Standard	0	0	1	ok
13	John Cook	JCO	Standard	0	0	1	ok
14	Stuart garner	SGA	Standard	0	0	1	ok
15	Audrius	AUD	Standard	0	0	1	ok
16	Darren Mills	DMI	Standard	0	0	1	ok
17	Steve Ruth	SRU	Standard	0	0	1	ok
17				**1**	**4**	**12**	

The layered Audit Team

1. We have identified 17 auditor, who will all receive training in the audit process.

2. At the moment the team are allocated audits on a sequential basis from the Audit Plan created by the Planning Tool.

3. At the moment no differentiation is made between the different types of audit i.e. Level 1, 2 or 3 and this will be clarified going forward – at the moment it is assumed all auditors will carry out the STANDARD audit as defined by the LPA Audit dorm.

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Planning Tool Creating the Timeline

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Imported automatically from Areacodes

Layered Process Audit Timeline Plan

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Area Code			Area Code	1	2	3	4	5	6	7	8	9	10	TOTAL
Days on Which PLA'a are planned			MaxUnits	Lasers 5	Turrets 2	Press Brakes 5	Heavy Press 8	Light Press 5	Kitting 5	Manual Weld 20	Robot Weld 5	Warehousing 6	Inspection 5	-
			Day Type	LAS	TUR	PBR	HPR	LPR	KIT	MWE	RWE	WHO	INSP	-
Day Type	From Configuration Table	12	1	1	0	0	0	1	0	1	1	0	0	-
Day Type	From Configuration Table	13	2	0	2	0	0	0	2	0	0	0	2	-
Day Type	From Configuration Table	14	3	0	0	3	0	0	0	3	0	3	0	-
Day Type	From Configuration Table	15	4	0	0	0	4	0	0	4	0	4	0	-
Day Type	From Configuration Table	16	5	0	0	0	5	0	0	5	0	0	0	-

Timeline created Automatically

Flag	Date	Month	Week	Day No	DayType	Audit	Unit	Audit	Unit	Audit	Unit	Audit	Unit	Audit	Unit	Audit	Unit	Audit	Unit	Audit	Unit	
							5		2		1		8		5		5		20		5		6		5	
1	Mon-03-Apr-17	Apr-17	14	1	1	1	1	0		0		0		1	1	0		1	1	1	1	0		0		4
1	Tue-04-Apr-17	Apr-17	14	2	2	0		1	1	0		0		0		1	1	0		0		0		1	1	3
1	Wed-05-Apr-17	Apr-17	14	3	3	0		0		1	2	0		0		0		1	2	0		1	1	0		3
1	Thu-06-Apr-17	Apr-17	14	4	4	0		0		0		1	1	0		0		1	3	0		1	2	0		3
1	Fri-07-Apr-17	Apr-17	14	5	5	0		0		0		1	2	0		0		1	4	0		0		0		2
1	Mon-10-Apr-17	Apr-17	15	6	1	1	2	0		0		0		1	2	0		1	5	1	2	0		0		4
1	Tue-11-Apr-17	Apr-17	15	7	2	0		1	2	0		0		0		1	2	0		0		0		1	2	3
1	Wed-12-Apr-17	Apr-17	15	8	3	0		0		1	3	0		0		0		1	6	0		1	3	0		3
1	Thu-13-Apr-17	Apr-17	15	9	4	0		0		0		1	3	0		0		1	7	0		1	4	0		3
1	Fri-14-Apr-17	Apr-17	15	10	5	0		0		0		1	4	0		0		1	8	0		0		0		2
1	Mon-17-Apr-17	Apr-17	16	11	1	1	3	0		0		0		1	3	0		1	9	1	3	0		0		4

Last unit number audited

Sequence number referencing unit

Automated Timeline & Audit Profile

- Type in a start date above - 44 day timeline [working days] is calculated – supressing weekends – week number and day type identified
- By area along the time line AUDIT HITS are identified using the day types identified in the configurator [expressed as a “1” in leftmost col.
- A related sequence number which depicts the unit number in the Area is created sequentially

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Planning Tool Creating Audit tags

For the anoraks

1	2	3	4	5	6	7	8	9	10
Lasers	Turrets	Press Brakes	Heavy Press	Light Press	Kitting	Manual Weld	Robot Weld	Warehousing	Inspection
1LAS1 Mon-03-Apr-17				5LPR1 Mon-03-Apr-17		7MWE1 Mon-03-Apr-17	8RWE1 Mon-03-Apr-17		
	2TUR1 Tue-04-Apr-17				6KIT1 Tue-04-Apr-17				10INSP1 Tue-04-Apr-17
		3PBR2 Wed-05-Apr-17				7MWE2 Wed-05-Apr-17		9WHO1 Wed-05-Apr-17	
			4HPR1 Thu-06-Apr-17			7MWE3 Thu-06-Apr-17		9WHO2 Thu-06-Apr-17	
			4HPR2 Fri-07-Apr-17			7MWE4 Fri-07-Apr-17			
1LAS2 Mon-10-Apr-17				5LPR2 Mon-10-Apr-17		7MWE5 Mon-10-Apr-17	8RWE2 Mon-10-Apr-17		
	2TUR2 Tue-11-Apr-17				6KIT2 Tue-11-Apr-17				10INSP1 Tue-11-Apr-17
		3PBR3 Wed-12-Apr-17				7MWE6 Wed-12-Apr-17		9WHO3 Wed-12-Apr-17	
			4HPR3 Thu-13-Apr-17			7MWE7 Thu-13-Apr-17		9WHO4 Thu-13-Apr-17	

Area 4: Heavy Press Shop: Press 3: Planned Audit date Thursday 13th April 2017

Audit Tags

- This is an interim table which creates audit tags from the HIT flag and the unit sequence number on the Audit timeline
- Each Flag comprises Area Number/Area Abbreviation/Unit Number and date of the Audit based on the configured days.

Planning Tool Audit Schedule

The List is filtered by this flag

Once Every 2 Months

1. Data from the Audit tag Matrix is extracted and a sequence number calculated.
2. The Auditor is allocated in a simple sequence – at the moment no reference is made to any differentiation of Level 1,2, and 3 audits.

Fablink Uk Limited

C:\Holding 2\Layered Process Audits\[FUKL Layered Process Audits R1V3 17 Mar 17.xlsx]PTList

Audit Schedule

Tags/Sequence Number/Auditor

17 Max Audutor ID

0 Last time

5 Last time

R	C	Extract	Flag	No	Date	Area	No		Audit Point	Auditor	Name	Level
1	1	1LAS1 Mon-03-Apr-17	1	1	Mon-03-Apr-17	Lasers		1LAS1	4030	6	Paul Nock	Level 3
1	5	5LPR1 Mon-03-Apr-17	1	2	Mon-03-Apr-17	Light Press		5LPR1	-	7	Bill Williams	Level 3
1	7	7MWE1 Mon-03-Apr-17	1	3	Mon-03-Apr-17	Manual Weld		7MWE1	Pen	8	Carl Hesson	Level 3
1	8	8RWE1 Mon-03-Apr-17	1	4	Mon-03-Apr-17	Robot Weld		8RWE1	PAN1	9	Dave Keats	Level 3
2	2	2TUR1 Tue-04-Apr-17	1	5	Tue-04-Apr-17	Turrets		2TUR1	-	10	Len Raby	Level 3
2	6	6KIT1 Tue-04-Apr-17	1	6	Tue-04-Apr-17	Kitting		6KIT1	Terex	11	Dave Evans	Level 3
2	10	10INSP1 Tue-04-Apr-17	1	7	Tue-04-Apr-17	Lasers		10INS	-	12	Gavin Smith	Level 3
3	3	3PBR2 Wed-05-Apr-17	1	8	Wed-05-Apr-17	Press Brakes		3PBR2	100T Amada	13	John Cook	Level 3
3	7	7MWE2 Wed-05-Apr-17	1	9	Wed-05-Apr-17	Manual Weld		7MWE2	Pen	14	Stuart garner	Level 3
3	9	9WHO1 Wed-05-Apr-17	1	10	Wed-05-Apr-17	Warehousing		9WHO1	Terex	15	Audrius	Level 3
4	4	4HPR1 Thu-06-Apr-17	1	11	Thu-06-Apr-17	Heavy Press		4HPR1	-	16	Darren Mills	Level 3
4	7	7MWE3 Thu-06-Apr-17	1	12	Thu-06-Apr-17	Manual Weld		7MWE3	Pen	17	Steve Ruth	Level 3
4	9	9WHO2 Thu-06-Apr-17	1	13	Thu-06-Apr-17	Warehousing		9WHO2	Leyland	1	Mike Singleton	Level 1
5	4	4HPR2 Fri-07-Apr-17	1	14	Fri-07-Apr-17	Heavy Press		4HPR2	-	2	Stuart Knight	Level 2
5	7	7MWE4 Fri-07-Apr-17	1	15	Fri-07-Apr-17	Manual Weld		7MWE4	Pen	3	John Butler	Level 2
6	1	1LAS2 Mon-10-Apr-17	1	16	Mon-10-Apr-17	Lasers		1LAS2	4050	4	Glyn Dickens	Level 2
6	5	5LPR2 Mon-10-Apr-17	1	17	Mon-10-Apr-17	Light Press		5LPR2	-	5	Ian Marshall	Level 2
6	7	7MWE5 Mon-10-Apr-17	1	18	Mon-10-Apr-17	Manual Weld		7MWE5	Pen	6	Paul Nock	Level 3
6	8	8RWE2 Mon-10-Apr-17	1	19	Mon-10-Apr-17	Robot Weld		8RWE2	PAN2	7	Bill Williams	Level 3
7	2	2TUR2 Tue-11-Apr-17	1	20	Tue-11-Apr-17	Turrets		2TUR2	-	8	Carl Hesson	Level 3
7	6	6KIT2 Tue-11-Apr-17	1	21	Tue-11-Apr-17	Kitting		6KIT2	Leyland	9	Dave Keats	Level 3
7	10	10INSP1 Tue-11-Apr-17	1	22	Tue-11-Apr-17	Lasers		10INS	-	10	Len Raby	Level 3
8	3	3PBR3 Wed-12-Apr-17	1	23	Wed-12-Apr-17	Press Brakes		3PBR3	200T Amada	11	Dave Evans	Level 3
8	7	7MWE6 Wed-12-Apr-17	1	24	Wed-12-Apr-17	Manual Weld		7MWE6	Pen	12	Gavin Smith	Level 3
8	9	9WHO3 Wed-12-Apr-17	1	25	Wed-12-Apr-17	Warehousing		9WHO3	JCB	13	John Cook	Level 3
9	4	4HPR3 Thu-13-Apr-17	1	26	Thu-13-Apr-17	Heavy Press		4HPR3	-	14	Stuart garner	Level 3
9	7	7MWE7 Thu-13-Apr-17	1	27	Thu-13-Apr-17	Manual Weld		7MWE7	Pen	15	Audrius	Level 3
9	9	9WHO4 Thu-13-Apr-17	1	28	Thu-13-Apr-17	Warehousing		9WHO4	Perkins	16	Darren Mills	Level 3
10	4	4HPR4 Fri-14-Apr-17	1	29	Fri-14-Apr-17	Heavy Press		4HPR4	-	17	Steve Ruth	Level 3
10	7	7MWE8 Fri-14-Apr-17	1	30	Fri-14-Apr-17	Manual Weld		7MWE8	Pen	1	Mike Singleton	Level 1
11	1	1LAS3 Mon-17-Apr-17	1	31	Mon-17-Apr-17	Lasers		1LAS3	4050	2	Stuart Knight	Level 2
11	5	5LPR3 Mon-17-Apr-17	1	32	Mon-17-Apr-17	Light Press		5LPR3	-	3	John Butler	Level 2
11	7	7MWE9 Mon-17-Apr-17	1	33	Mon-17-Apr-17	Manual Weld		7MWE9	Pen	4	Glyn Dickens	Level 2

The LPA Database

The LPA Register

Converts to month end for analysis purposes

Scores on the doors

Fablink UK Limited

LPA Register

Enter 1,0,-1

								1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Actual	Month	Planning Tool Date	Area	Area No	No	Auditor	Operator	Is Safety Eqpt being worn	Is Process Route Sheet Present?	Is Drawing present and current?	Drawing Issue Level vs PRS	adequate Work Instructions	specific stillage for part and is it	First/Last Off label attached to part?	operator trained? Check against	History Sheet present and up to	5S Audit	Parts Identification	Is the TPM Sheet up to date?	Is there a PFMEA for the part?	Is there a Control Plan for the part?	Is there a Process Flow for the part?	Total	Total
02-Mar-17	Mar-17	01-Mar-17	Press Brakes	2	5	Glyn Dickens	xx	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	12	80.0%
03-Mar-17	Mar-17	01-Mar-17	Press Brakes	2	4	Bill Williams	xx	1	1	1	1	0	0	0	0	0	1	1	1	1	1	0	9	60.0%
04-Mar-17	Mar-17	01-Mar-17	Lasers	1	6	Paul Nock	xx	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	100.0%
128,391		128,385						3	3	3	3	2	2	2	2	2	3	3	3	2	2	1	36	
	LateDays	-6						100%	100%	100%	100%	67%	67%	67%	67%	67%	100%	100%	100%	67%	67%	33%	80%	87%
	AVLD	- 2																						

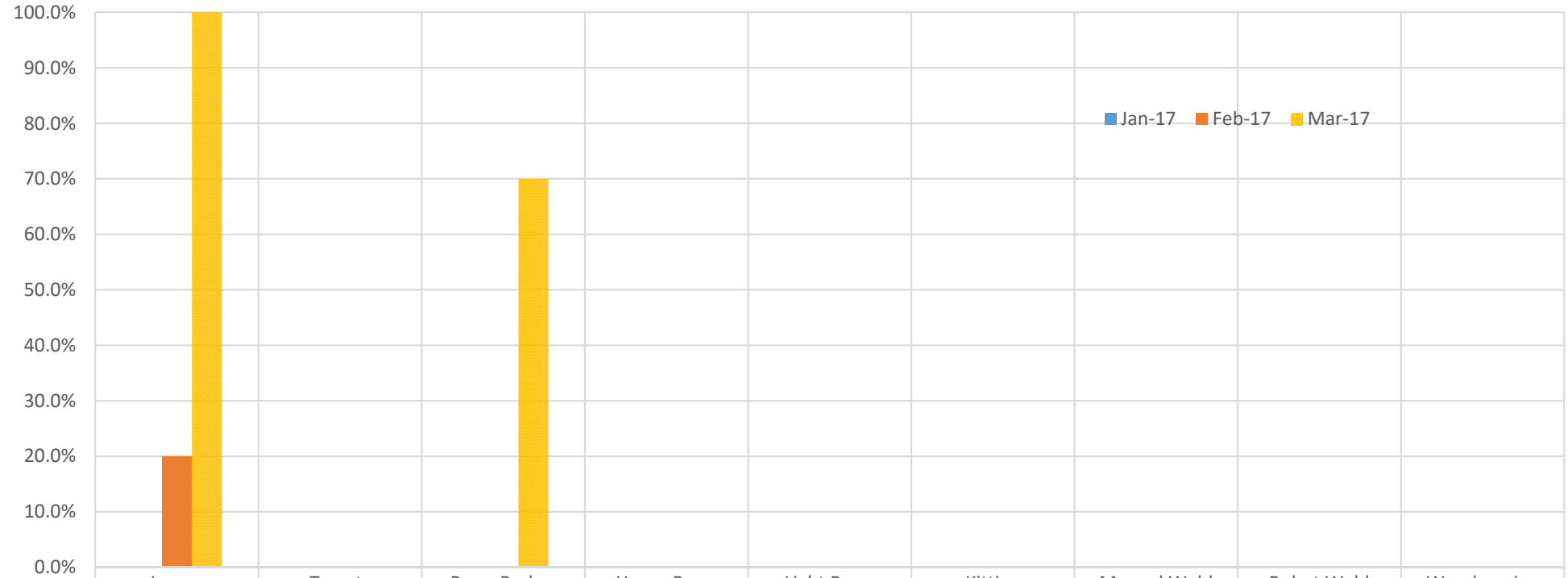
Day Lateness against LPA Planning Tool

Register Filters Validate Graphical data extracted

- Located in the same spreadsheet as the LPA Planning Tool – structured on the same principles as the Quality Concerns database which is long established.
- The 15 Questions are answered as “1” or zero – to correspond to yes or no for each.
- Scores are calculated by audit and cross sectional, through the 15 questions in total.

The LPA Graph -

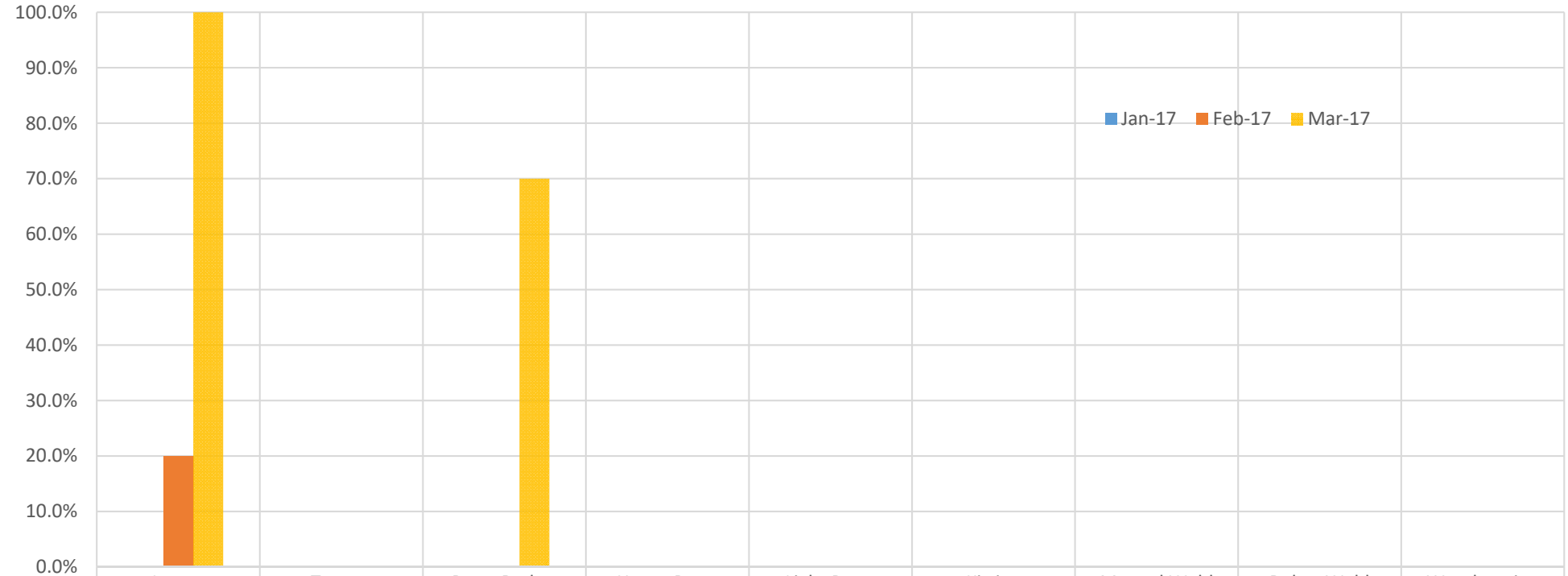
Average LPA Scores by Month by Area



	Lasers	Turrets	Press Brakes	Heavy Press	Light Press	Kitting	Manual Weld	Robot Weld	Warehousing
Jan-17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Feb-17	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mar-17	100.0%	0.0%	70.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The LPA Graph -

Average LPA Scores by Month by Area



	Lasers	Turrets	Press Brakes	Heavy Press	Light Press	Kitting	Manual Weld	Robot Weld	Warehousing
Jan-17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Feb-17	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mar-17	100.0%	0.0%	70.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

The LPA Corrective Actions

LPA Corrective Actions

No Individual response to Each audit – except safety Imperative

1. Monthly Analysis of Generic Question Scores from 60 Audits and a Corrective Action generated accordingly.

2. Pegged failure modes will look at the dertail within each of the Generic question scores.

Under Construction

End