

TLA's (Three Letter Acronyms) - An easy guide

(An expert is someone who knows one more acronym than you!)



1. The Background

Manufacturing management is getting more complicated by the day and it is not helped by the proliferation of TLA's, FLA's and other code words. Without knowing the code words it is nearly impossible to understand what people are talking about. The guide below is a random smattering of the various acronyms with some "tongue-in-cheek" definitions to help understand what they mean. No responsibility is accepted for getting it wrong or upsetting people. Send me your favourites and I can extend the list.

2. Two Letter Acronyms

IS - Information Systems: Systems that allegedly provide information but most actually hide information in a mass of data.

IT - Information Technology: The enabling technologies for IS.

QA - Quality Assurance: Controlling product characteristics by a variety of techniques before and during production. Before the event quality is always more effective.

QC - Quality Control: Trying to control product characteristics by inspection after design and manufacturing systems are fixed. A futile effort that is always after the event.

SC - Significant Characteristic: A feature (dimensional or visual) that defines the "quality" of the product as perceived by the user.

VA - Value Analysis: Examination of the product's cost components to reduce cost. After the event.

VE - Value Engineering: Examination of the product's cost components during design to reduce cost. Before the event. Old concept now revitalised by the introduction of Target Costing.

3. Three Letter Acronyms (TLA)

AMT - Advanced Manufacturing Technology: A range of techniques and tools (mainly computer based) to improve manufacturing processes.

AQL - Acceptable Quality Level: Quality control based on the number of defects that are permitted per thousand delivered items. Correct use of quality techniques makes this concept outdated.

AQP - Advanced Quality Planning: Quality planning set into the business framework - scheduling, product definition, prototype development, manufacturing preparedness techniques used at the source of the product.

BBO - Broad Brush Overview: What this gives for the TLA's. See you're getting the hang of it already!

BOM - Bill of Materials: A list of the parts that are required to make up a final manufactured item. Generally generated as part of a MRP or similar system.

C_{pk} - Process Capability Measure: Defines if the process is capable of producing to the required specification. Should be greater than 1.33.

CAD - Computer Aided Design:

CAE - Computer Aided Engineering:

CAM - Computer Aided Manufacturing:

CIM - Computer Integrated Manufacturing:

CBA - Condition Based Assessment: Methods for determining machine conditions and determining maintenance needs.

CNC - Computer Numerically Controlled:

DFA - Design for Assembly: Design process (pioneered by Boothroyd and Dewhurst) to reduce part count and make products easier to assemble.

DFM - Design for Manufacture: Extension of DFA to ensure that designed parts can be manufactured cost-effectively.

EDI - Electronic Data Interchange: Methods and tools for exchange of data between customers and suppliers. Internet technologies are largely superseding proprietary systems.

ERP - Enterprise Resource Planning: The successor to MRP and MRPII (because in most case neither worked properly).

EBQ - Economic Batch Quantity: The result of inefficient set-up processes where the cost of set-up has to be amortised over a large production run.

FMS - Flexible Manufacturing System: Manufacturing systems that are capable of producing a range of products on advanced machinery. Cell based manufacturing can be more cost effective.

JIT - Just In Time: Production management based on pulling products through the production system rather than pushing the orders. Thought by many to be related mainly to suppliers but in reality it is internal discipline that is more important.

LAN - Local Area Network: Computer network based largely on a single site or office.

MIS - Management Information System: Code words for what is most often a Management Data System with little real information hidden in the wealth of data.

MRP - Materials Requirements Planning: Computer based planning method for production management. Can be effective but tends to lock the system in stone and give inflexible production management.

MRP II - Manufacturing Resource Planning: MRP didn't work too well so they rebranded it as MRPII and sold it again.

NVA - Non-Value Activity: An activity that does not add value e.g. storing, moving, counting etc.

OEE - Overall Equipment Effectiveness: Measures how well equipment is running, quantity of products being produced and the quantity of good output. A crucial part of TPM.

OPT - Optimised Production Technology: Production improvement method based on bottleneck improvements.

QFD - Quality Function Deployment: A set of tools to highlight where engineering effort is needed to improve and maintain quality.

RCM - Reliability Centred Maintenance: Processes for keeping machines operating reliably.

SPC - Statistical Process Control: Control the process and you will control the output. Before the event controls.

SQC - Statistical Quality Control: Tools for assessing how many rejects you have made. After the event controls.

STA - Supplier Technical Assistance: Assistance provided by customers to enable suppliers to understand the TLA's.

TPM - Total Productive Maintenance: Method for the reduction of equipment breakdowns and improved worker productivity. Based on both preventative and predictive maintenance.

TQM - Total Quality Management: Combination of systems, training, commitment and tools to produce quality at source.

WAN - Wide Area Network: What do you call the manager of a WAN? Obviously he is a WAN...

WCM - World Class Manufacturing: What you achieve if you use all of the TLA's.

WIP - Work In Progress: don't learn this one, instead get rid of the WIP and save money, time, effort and get smarter.

ZQC - Zero Quality Control: Quality control through process control and mistake proofing.

4. Four Letter Acronyms (FLA) - The advanced course

APQP - Advanced Product Quality Planning: Methods for product quality planning before production. Uses FMEA and Control Plans for Quality Assurance (QA). An advanced case of AQP that emphasises product quality. See QS 9000.

FMEA - Failure Modes Effects Analysis: Analysis of process and product design to rank possible failure modes and establish preventative action before the event.

CAPP - Computer Aided Process Planning:

OTED - One Touch Exchange of Dies: Die change based on a single event. The ultimate goal of SMED.

PPAP - Production Part Approval Process: Process for approval of production parts for use. See QS 9000.

SMED - Single Minute Exchange of Dies: Radical approach to die changeover and set-up time reduction.

5. Code Words

5-S - "seiri, seiton, seiso, seiktsu and shitsuke" or "organisation, orderliness, cleanliness, standardised cleanup and discipline". Japanese method for workplace improvement.

6 Sigma - Quality management based on the production of parts within the boundaries of 6 standard deviations of the mean. This will result in 99.73% of all parts being produced within the limits.

Ishikawa Diagram - Cause and effect diagram that seeks to identify the possible causes of a specific effect.

ISO 9000 - International Standard for quality management systems.

ISO 14000 - International Standard for environmental management systems.

Jidoka - "Human automation" of the process by standard operations to prevent errors.

Kaizen - Continuous improvement by small incremental steps.

Kanban - Japanese word for signal. A kanban is a signal that the next workstation requires more material to work on.

Lean Management - Consolidation of improvement systems into a single coherent process for continuous improvement, cross-functional management and employee involvement. "Lean" because parts, people and processes are reduced.

Pareto Principle - The 80:20 rule expressed in the name of the economist Vilfredo Pareto (who discovered the rule).

Poke-yoke - Mistake proofing or the building of fool-proof devices to ensure quality.

QS 9000 - Automotive industry extensions to ISO 9000.

Taguchi - Design of experiments to allow more than one variable to be changed at a time and reduce the number of experiments.

Target Costing - Method of working from the cost back to the design rather than vice versa.