

Automotive Council – Business Environment & Skills Group



THE AUTOMOTIVE INDUSTRY JOB FRAMEWORK

Job Families:	Engineering (E)	Manufacturing (MFG)	Materials Planning & Logistics (MPL)	Purchasing (PU)	Quality (Q)
Definition:	Invents, researches, develops, designs, stimulates, controls, builds, tests, improves, validates, maintains and project manages: structures; machines; devices; systems; vehicles; components; materials; algorithms; and processes to required standards of quality, cost, timing, delivery and safety.	Uses various processes and methods to transform raw materials, components and parts into finished goods/ vehicles for customers to required standards of quality, cost, delivery and safety.	Determines how much and what type of materials and products to hold where in the supply chain which include: managing inventory control, warehouse, distribution and replenishment plans.	Sources suppliers and develops relationships to negotiate and buy goods, materials and services to meet the Company's operational requirements. This includes: supplier selection, tendering and cost estimating.	Guarantees the continual compliance of quality standards for products and processes to ensure component/vehicle reliability, consistency and safety.
Family Members: (Functions/Departments)	Research (RES) / Design & Development (DES) / Programme Management (PRG) / Production Engineering (PRE)	Manufacturing (MAN)/ Assembly (ASS) / Tool Making (TOO) / Maintenance (MAI) / Lean Manufacturing (LEA)	Materials Planning (MP) / Capacity Planning (CP) / Logistics (LOG) / Warehouse (WAR)	Procurement (PR) / Cost Estimating (CE)	Management Systems (QMS) / Quality Assurance (QQA)/ Supplier Quality (QSQ) / Operations (QOPS) /
National Qualifications	Levels				
Degree -Prefer Masters NVQ Level 7 Institute Fellow	Head Of/Technical Expert (E6)	Head Of (MFG6)	Head Of (MPL6)	Head Of (PU6)	Head Of (Q6)
Degree Preferred, HND BTec Professional Level 5, NVQ Level 5	Manager/Principle Engineer (E5)	Manager (MFG5)	Manager/Senior Planner (MPL5)	Manager (PU5)	Manager (Q5)
Degree Preferred, HNC BTec Professional Level 4, NVQ Level 4	Section Lead/Senior Engineer (E4)	Team Leader/Senior Technician/Senior Tool Maker/ Master Practitioner (MFG4)	Section Lead / Planner (MPL4)	Section Lead / Senior Buyer or Engineer (PU4)	Senior Quality Engineer (Q4)
Degree Preferred, A Levels, ONC, BTec Diploma Level 3, NVQ Level 3	Engineer (E3)	Technician/Senior Operator/Tool Maker/ Senior Practitioner (MFG3)	Analyst (MPL3)	Buyer / Engineer (PU3)	Quality Engineer (Q3)
Degree for Graduate Placement, GCSEs Level A-C, NVQ Level 2	Technician (E2)	Operator/ Practitioner (MFG2)	Operator (MPL2)		Quality Technician (Q2)
GCSEs Level D-G, Key Skills Level 1, NVQ Level 2	Trainee (E1)	Trainee (MFG1)	Trainee (MPL1)	Trainee (PU1)	Trainee (Q1)

Automotive Council – Business Environment & Skills Group



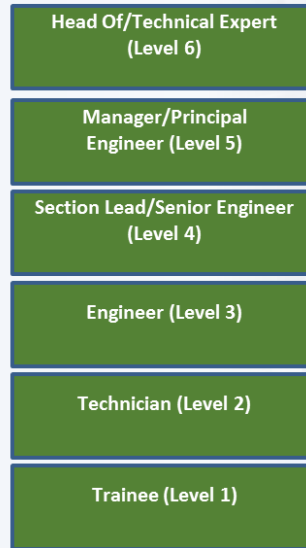
Job Families:

Family Members: (Functions/ Departments)

Engineering (E)



Career Levels: (Functions/ Departments)



Job Description: (Generic)





Apprentice Tool Maker – Job Description
(Job Code and Level: MFGT0001)

Definition:

Learns the different types of tools to enable the production processes to be as efficient as possible. This may include jigs, fixtures, clamps or moulds to obtain a more robust consistently produced part that meets the specification of the customer. Time served apprenticeship with qualification.

Overall Purpose of the Role:

Undertake a programme of training to gain full working knowledge in all aspects relating to Tool making including learn to diagnose faults leading to repair, as well as maintaining tooling equipment. To assist and support to undertake planned and reactive maintenance as well as liaise with internal stakeholders and subcontractors.

Key Responsibilities:

- Reading and interpreting engineering data; reading, interpreting and producing engineering drawings (both by CAD and by hand), specifications, limits, fits, and computer generated information in order to determine what has to be produced and to what specification
- Selecting and using a range of measuring and testing equipment to check components are to the required quality and accuracy
- Understanding the structure, properties and characteristics of common materials used for the manufacture and repair of tooling, Moulds, Dies and jigs and fixtures
- Understanding and demonstrating the safe operation, correct selection and skilled usage of a range of hand tools used for tool making and die maintenance, including grinders, drills, stones etc.
- Understanding the safe operation and theory of the range of complex and often state of the art workshop machinery used such as (CNC lathes, milling, grinding and erosion machining centres, drilling and welding equipment) and how to set up and operate the machinery/equipment efficiently and effectively
- Apply and understand the methods and techniques used to assemble and disassemble tools, dies, jigs and fixtures

Automotive Council – Business Environment & Skills Group



Job roles

Rank	CRITICAL NOW Impact business output/Vacancy open 3+ months	Rank	FUTURE ONGOING Start to impact business next 3-12 months / Ongoing future recruitment need
1	Design Engineer	1	Design Engineer
2	Production Engineer	2	Production Engineer
3	Buyer	3	Maintenance Technician
4	Senior Design Engineer/Lead	4	Manufacturing Technician/Senior Op
5	Maintenance Technician	5	Tool Maker
6	Programme Manager	6	Manufacturing Team Leader
7	Quality Operations Engineer	7	Maintenance Engineer
8	Manufacturing Team Leader	8	Supplier Quality Engineer
9	Programme Engineer	9	Design & Development Technician
10	Quality Operations Technician	10	Buyer

Competencies

RANK	CRITICAL NOW Impacting business output/skill need to be addressed in the next 6-12 months	RANK	FUTURE ONGOING Start to impact business in the next 1-2 years/ foreseeable ongoing need 2-5+ years
1	Lean Manufacturing	1	Lean Manufacturing
2	Computer Aided Engineering	2	Manufacturing Process Knowledge
3	Quality Core Tools Training	3	Leadership Training
4	Mechatronics	4	Basic Engineering
5	Leadership Training	5	Advanced Problem Solving
6	Programmable Logic Control (PLC)	6	Quality Core Tools Training
7	Advanced Problem Solving	7	Programme Logic Control (PLC)
8	Manufacturing Process Knowledge	8	Robotics
9	Robotics	9	Welding
10	Programme Management	10	Computer Aided Engineering

Automotive Council – Supply Chain Group



Chaired by Dave Allen, Jaguar Land Rover

- 39 members from across the UK automotive spectrum
- 5 work streams:
 1. **Quantifying and capitalising on business opportunities for the UK supply chain**
BEIS
 2. **Improving supply chain long-term competitiveness**
Chris Owen, SMMT IF
 3. **Satisfying supply chain demand – Inward investment**
Lawrence Davies, AIO
 4. **Finance for growth**
Mike Mychajluk, JLR and Richard Hill, RBS
 5. **Improving innovation and premium product manufacturing in the supply chain**
Chris Owen, SMMT IF

“Building consensus, addressing the challenges”

Supply Chain Group - New Product Launch Excellence (NPLX)

What is it

- New Product Launch Excellence (NPLX) is a national programme aimed at improving the New Product Introduction (NPI) capabilities of the UK supply chain through the provision of essential skills, training, coaching support and project management expertise.

Benefits of NPLX

- The NPLX programme up-skills suppliers and provides the catalyst for dramatic improvements in new product launch capability
- The programme supports IATF16949:2016 standard which mandates effective NPI processes and competently trained practitioners
- Regional training and coaching waves provide convenient local venues with opportunities for best practice sharing
- Cost effective solution due to leveraging national volume across OEMs and tier ones

Programme Structure

- Modular curriculum designed around specific business environments and operational roles.
- Blended learning approach incorporating classroom training and on-site coaching/mentoring

Supply Chain Group - New Product Launch Excellence (NPLX)

Module 0

- ❑ Management Awareness
- ❑ Job Role: Senior management
- ❑ Duration: 2 days

Module 1

- ❑ NPI Programme Management
- ❑ Job Role: NPI project manager
- ❑ Duration: 5 days

Module 2

- ❑ Design & Develop Product
- ❑ Job Role: Product designers & developers
- ❑ Duration: 4 days

Module 3

- ❑ Manufacturing Process Design & Development
- ❑ Job Role: Production eng. & quality assurance
- ❑ Duration: 4 days

Module 4

- ❑ Managing Product & Quality
- ❑ Job Role: Quality assurance
- ❑ Duration: 3 days

Module 5

- ❑ Intro. to Lean & Value Stream Mapping
- ❑ Job Role: Production eng. & supply chain management
- ❑ Duration: 2 days

Module 6

- ❑ Material Planning & Logistics
- ❑ Job Role: Purchasing, planning and logistics
- ❑ Duration: 2 days

Module 7

- ❑ Manufacturing Process Validation
- ❑ Job Role: Production and maintenance
- ❑ Duration: 3 days

Module 8

- ❑ Introduction to NPLX
- ❑ Job Role: Leadership & heads of dept.
- ❑ Duration: 2 days

Module 9

- ❑ On-Site Coaching
- ❑ Job Role: NPI team
- ❑ Duration: 1 to 3 days



24 topics organised into 8 training modules with on-site coaching

Supply Chain Group – Improving supply chain competitiveness (LTASC)

The Supply Chain

“improved productivity through better process definition and process improvement”

“The activity will significantly increase the export revenues and has resulted in the creation of 38 new jobs to date (in the UK), with more planned in the future”

“Revised plant layouts that will optimize production operations”

Increased productivity

“Further recruitment is underway as per schedule that will fully utilise the new equipment on several projects that will start in the New Year”

Total invested £75m

3.6 : 1 private : public investment leverage**

“Innovative processes to improve manufacturing enables us to optimise the efficiency of our machines and explore more innovative configurations”

73 Manufacturers engaged – Small, medium & large

“Delivering 'micro-hybrid' vehicle functionality, improved fuel economy, reduced CO₂ emissions and improved air quality”

“we have established a world class expertise in the use of dynamic measurement”

> 5,000 jobs created & safeguarded*

< £6,500 per job**

“We have actually recruited an additional 25 direct operatives since the start of Q2 2016 and have implemented a 3 shift system (previously we operated on days and night shift)”

Increased capacity

> 2000 people trained & developed

Innovative manufacturing processes

“The application of Lean Manufacturing techniques across all production areas to deliver improved utilization and consequential cost savings”

New products to market

“This much enhanced product offering has made a step change in the attractiveness of the suite of products”

* Actuals & forecasted ** LTASC II programme

Supply Chain Group – Improving supply chain competitiveness (NMCL)

Overall Aim

To have a single, national, quality assured, best practice approach to improving the competitiveness and productivity of manufacturing supply chain companies to raise workforce capability, boost economic growth and export

The Need

Brexit impacts - Risks

- EU tariffs - Need to reduce cost
- Customs procedures – Supply chain impacts
- Skills – Reduced access to skilled talent
- Post-brexit loss of confidence by manufacturers ^[1]
- Forecasted manufacturing investments on the decline ^{[2] [3]}

Growth - Opportunities

- “Match Fit” to capitalise on new export opportunities post-Brexit
- **Auto** – £71.6bn turnover, £19bn GVA > 2m vehicles assembled, increase domestic content > 41%
- **Aero** – £31.1bn turnover, £10bn GVA, 9 year order backlog worth £195bn
- **Rail** – HS2, NTFL, JNAT, NTFD, all imminent > £10bn

Support Available

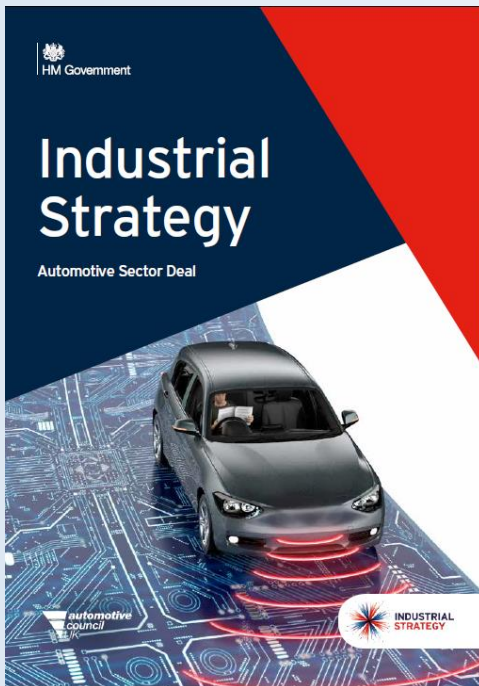
- Closure of MAS and Business Growth Service (March 16)
- Deletion of AMSCI (November 15)
- No line-of-sight to funding support for supply chain

The Proposition



1. A single national approach to measuring and improving the competitiveness and productivity of manufacturing supply chain companies
2. Adopt a single national approach to developing impactful competitiveness improvement plans for manufacturers, underpinned by a sound business case
3. Provide a single common platform which will address the challenges set out in both Automotive, Aerospace and Rail industrial strategies
4. Ensure the approach is recognised and adopted by the UKs largest manufacturers
5. Ensure the framework allows nationally consistent collaboration with Local Enterprise Partnerships (LEPs)

Supply Chain Group – Improving supply chain competitiveness (NMCL)



Business Environment

Supply chain competitiveness and productivity improvement

- ▶ £16m funding subject to business case for an industry-led national supplier competitiveness and productivity improvement programme to support a sustainable and internationally

competitive UK supply chain for future volume vehicle production. A robust monitoring and evaluation framework will be set up to measure the success of this programme.

Business Environment

Supply chain competitiveness and productivity improvement

In order to support the industry's ambition to increase the value of UK content in domestically produced vehicles to 50 per cent by 2022, industry will:

- ▶ Implement a single scalable productivity improvement programme; and
- ▶ Match fund at least £16m (contribution in kind) from supply

chain companies participating in the competitiveness and productivity improvement programme.

- ▶ Vehicle manufacturers and Tier one suppliers will take a leading role in identifying key strategic suppliers and take part in the governance of programme.

BREXIT challenge summary

Key uncertainties

1

Trade tariffs

2

Access to skilled labour

3

Currency shifts

4

Customs & logistics



Impact & implication

- Loss of confidence by manufacturers ^[1]
- Forecasted manufacturing investments on the decline ^[2] ^[3]
- Supply chain costs - Transparency
- Concern over export competitiveness
- Lead times, inventory management
- Skilled workforce capabilities, now and future – Particularly STEM
- Labour capability and cost



THANKYOU