



Conformity of Production (CoP)

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Conformity of Production (CoP)

- Introduction
- Overview of CoP Principles
 - Who needs CoP?
 - When do I need to comply?
 - On-going compliance
- Control plans
 - Future proofing
 - Sector specific examples
 - What's good?
 - What's not so good?



Conformity of Production (CoP)

- Quality Documentation
 - Quality systems overview ISO/TS
 - Quality documentation. Non ISO/TS
 - Typical audit schedule
 - Typical non conformances
 - Closing non conformances
- On going compliance revisited



Myths and Legends

C.O.P is really difficult to understand

Very bureaucratic

Costs a fortune

Civil servants are unhelpful and unapproachable

Takes forever

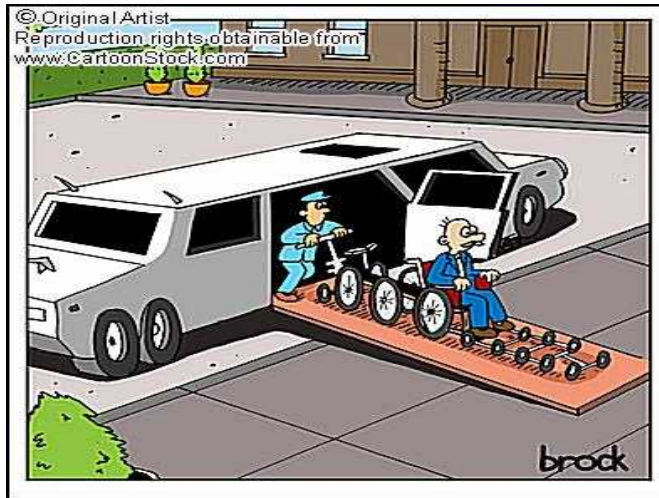
Formal quality system required



Who is affected?



- Who needs CoP clearance?
- Anybody who requires a type approval certificate





Time scales

- When will I need CoP clearance?
- CoP should be complete **before** a Type Approval Certificate is issued
- Some key dates, new types:
 - M2/M3 April 2009
 - M2/3 Multi Stage April 2010
 - N2/3~O1/4 October 2010
 - M1 Special purpose April 2011
 - N,M,O Special purpose October 2012
 - Other dates and categories.....



Conformity of Production (CoP)

- Overview of CoP Principles
 - What is CoP ?
 - The ability to produce a series of products which conform to the specification and performance requirements of a relevant directive.
 - Simplified; is the 10th, 100th 1000th the same as the one type approved?



What does CoP affect

- CoP is only concerned with those aspects of a vehicle that are type approved
 - Examples, change to the loading conditions
 - May affect; Brakes, Tyres, Masses and Dimensions.....
 - Change to the colour of a vehicle may affect, err nothing
 - If you add another subject, you need to consider the CoP implications



What does CoP affect

- Multi stage builds
 - Second stage not responsible for base vehicle, only the components or systems added by the second stage
 - Close tie's required
 - Base builder may change something that could affect 2nd stage approval, without this tie up 2nd stage approval may become invalid.
 - Example, change of load rating on tyres

Conformity of Production (CoP)

- So, how can I reach the promised land, CoP clearance?





How do I get there?

- Two main routes
 - Formal quality system
ISO9001/TS16949 + Control plans
However, formal quality system not mandatory, therefore:
 - Quality documentation (manual) +
Detailed control plans + On-site
assessment



Maintaining Compliance

- On-going compliance
- Formal or Informal route, on-going compliance the same
- Demonstrate control of production
 - Surveillance audits
 - Records of tests
 - Review of control documents



Control Plans

- What is a control plan?
 - A control plan is a documented description of the procedures, checks and activities necessary to verify that the production unit continues to conform to the type approval requirements with regard to specification, marking and performance



Control Plans (continued)

- Control plan layout
 - There is no mandatory layout, you choose what suits your needs best
 - Electronic or paper copies acceptable
 - The control plan should become part of your quality system, the results generated will be inspected during any surveillance audit

Control Plans. Example

Subject	Legislation		CoP Requirements		
	DIR	REG	Insp Type	Freq	Control Doc
Speedo	75/443	39	1	1/ Year	IVXX5
			2/3	1/mth	
			4	100%	
Key					
Inspection Type 1			Vehicle test (Reg/Dir)		
Inspection Type 2			Visual/Dimensional verification		
Inspection Type 3			Record details build log		
Inspection Type 4			Functional check		
Inspection Type 5			Supplier CoP		



Control Plans. Bus/Coach/SP

Subject	Legislation		CoP Requirements		
	DIR	REG	Insp Type	Freq	Control Doc
*Bus & Coach	2001/85	52	2	1/ mth	IVXX5
		66	4	100%	IVXX11
* Refers to 70/156					
Key					
Inspection Type 1			Vehicle Test (Reg/Dir)		
Inspection Type 2			Visual/Dimensional Verification		
Inspection Type 3			Record details in log		
Inspection Type 4			Functional Check		
Inspection Type 5			Supplier CoP		



Control Documents

Control Description Sheet - **IVXX5**

Bus and Coach

Procedure	Description	Inspection Type	Responsibility	Record
CCC1	Material check	2	Quality dept	Goods
	Weld check	2	Quality dept	CoP record
	Dimensional Check	2	Inspection/ quality	Cop record
	General visual check	2	Inspection	Build log



Procedure

Procedure CCC1- Superstructure

Material check	Compare material supplier certificate with order/production drawing
Weld check	Check weld spacing. Visually check weld integrity, if in doubt conduct die penetration test or
Dimensional Check	Measure key dimensions (hoop spacing, door openings, emergency exits and.....)
Visual check	Conduct visual check of frame, record significant damage and or missing sections
??????	????????????



Control Plans. Body Builder

Subject	Legislation		CoP Requirements		
	DIR	REG	Insp Type	Freq	Control Doc
Lighting Installation	76/756	48	1	1/ Year	IVXX4
			2	1/mth	IVXX7
			4	100%	
Key					
Inspection Type 1			Vehicle Test (Reg/Dir)		
Inspection Type 2			Visual/Dimensional Verification		
Inspection Type 3			Record details in log		
Inspection Type 4			Functional Check		
Inspection Type 5			Supplier CoP		



Control Documents

Control Description Sheet – IVXX4

Lighting Installation

Procedure	Description	Inspection Type	Responsibility	Record
BBB1	Rear light position	2	Quality dept	CoP record
	Number plate position	2	Quality dept	CoP record
	Side outline markers	2	Quality dept	Cop Record
	Functional Check	2	Inspection	Build log



Procedure

Procedure BBB1- Lighting Installation

Rear light Position	Measure rear light position in accordance with R48. Check visibility angles
Number plate position	Measure number plate position in accordance with R48. Check visibility angles
Side outline markers	Measure number plate position in accordance with R48. Check visibility angles
Visual check	Check lighting for functionality and damage
???????	?????????????

Control Plans. Trailer

Subject	Legislation		CoP Requirements		
	DIR	REG	Insp Type	Freq	Control Doc
Rear Underrun	70/221	58	1	1/ Year	IVXX3
			5	-	N/A
			4	100%	
Key					
Inspection Type 1			Vehicle Test (Reg/Dir)		
Inspection Type 2			Visual/Dimensional Verification		
Inspection Type 3			Record details in log		
Inspection Type 4			Functional Check		
Inspection Type 5			Supplier CoP		



Control Documents

Control Description Sheet – IVXX3

Rear Underrun

Procedure	Description	Inspection Type	Responsibility	Record
TTT1	Dimensional Check	2	Quality dept	CoP record
	Radius Check	2	Quality dept	CoP record
	Load check	2	Quality dept	Cop Record



Procedure

Procedure TTT1- Rear Underrun

Dimensional check	Verify supplier CoP
Radius Check	Verify supplier CoP
Load Check	Conduct load test in accordance with 70/221
Visual check	Check for functionality and damage
??????	????????????



Notes

- Multi stage builder should have some formal contact with base or previous stage
- Multi stage build, second stage builder not responsible for the CoP of the first stage. Third stage not.....You get the picture.
- VCA happy to review CoP plans initially to offer advice. On going compliance to review relevance of control plans
 - If after a period of time you can demonstrate good control of production, we can review your test/inspection process and where appropriate reduce the testing



Future Proof

- Don't restrict your control plans to just the immediate subjects
- If you intend to introduce a number of Type Approval subjects over a given time period think about covering all of the CoP at once.
 - Advantages
 - Saves you money
 - Saves you time



What's a good control plan

- Clear and unambiguous
- Suitable for the subject
- In a format that suits the manufacture and is acceptable to the VCA
- Demonstrates compliance
- Flexible



What's a poor control plan

- Disjointed
- B.O.M (Bill of material is not a control plan)
- Rigid
- Insufficient information
 - Test/measurement description
 - Method of recording
 - Frequency
 - Responsibility



Questions



Break Time



The next session will deal with quality documentation and auditing

Welcome Back



Refreshed and raring to go for the final session? Quality



Quality Documentation

- Formal quality system
 - Early days BS5750
 - Superseded by ISO9000 Series
 - Several updates, latest iteration ISO9001:2000 introduced continual improvement
 - Sector specific QS9000 (finished 2006)
ISO/TS16949
 - TS (Technical Standard) developed by the big 5 automotive manufacturers. Features, continual improvement, defect prevention, reduction in variation and waste in the supply chain



Quality Documentation

- Formal quality system
 - For CoP purpose formal QMS covers 90% of CoP requirements. (VCA have a Management Systems department that can advise and Certify to ISO/TS)
 - Additional control plans required
 - In some cases no initial assessment required for certified manufacturers
 - Certification should be from accredited body IAF (international Accreditation Forum) members
 - On-going clearance *may* require surveillance audit.



Quality Documentation

- Informal Quality System
- Quality Manual or documents used to ensure product consistency should contain, but not be limited to at least the following:
 - Approved suppliers
 - How does the company select and monitor suppliers?
 - Incoming goods
 - How does the company ensure supplied goods conform?



Quality Documentation

- Non-conforming goods
 - How does the company ensure that goods purchased or manufactured that do not conform are not used for production?
- Staff training
 - How does the company ensure staff are properly trained? How is this recorded?
- Calibration
 - How does the company ensure that all relevant equipment is calibrated?



Quality Documentation

– Change Control

- Important one this one. How does the company ensure that any changes to the design or performance of the product which might affect the validity of the approval is notified to the authority?

– Final inspection

- How does the company ensure that the final product conforms?

This is a minimum list, quality documentation should be sufficient for the product and have continual improvement in mind



Typical Audit Schedule

- Opening Meeting – Outline of Audit
- Quality/procedure manual review
- Overview of CoP system/Control plans
- Site visit. Production line work instructions/equipment/end of line testing
- Document control. EC legislation/drawings/obsolete documents



Typical Audit Schedule

- Records. Test reports/calibration/suppliers
- Change control. Design/development/documentation
- Opening day review/questions
- Day 2
- Review day 1
- Purchase. Supplier selection/supplier monitoring



Typical Audit Schedule

- Calibration. In-house/external/
process/traceability
- Control of N/C goods.
Supplier/production. Quarantine area
- Product storage. Stock
rotation/storage
- Review of day 2
- Audit summary
- Close



Typical Non-Conformances

- **No access to latest Regulation/ Directive.**
 - Legislation changes you need to be up to date
- **No change control policy**
 - Changes to products without updates to the approval causes problems for manufacturers and customers
- **Out of calibration equipment**
 - You need confidence in your tools
- **No quarantine area for non complying goods**
 - You need to prevent N/C goods being used in production

Typical Non-Conformances

- No document/drawing control
 - I once visited a company that had the design chalked on the floor. They cleaned up for my visit and lost all the latest designs.





Closing Non-Conformances

- Most times documentary evidence is sufficient
- Where documentary evidence is inappropriate photographic evidence might be better
- If the N/C is serious enough a re-visit might be appropriate (serious safety or environmental concerns)



Maintaining Compliance – Revisited

- Formal or Informal route, on-going compliance the same
- Demonstrate control of production
 - Surveillance audits
 - Records of tests/processes/inspections
 - Review of control documents
 - Evidence
 - This will help us help you



CoP Summary

- CoP required before Approval Certificates issued
- Formal quality management system (QMS) not mandatory but recognised
- Informal quality system has a minimum content
- Control Plans required
- Site audit may be required
- On-going compliance essential
- Guidance on type approval & CoP can be found on the VCA web site: www.vca.gov.uk

And Finally

- Look at VCA as your partner.
 - VCA has over 25 years experience in dealing with type approval and CoP around the world
 - Experience in every sector (car, bus, truck, trailer, motorcycle, agricultural)
 - We can help you interpret legislation (we are linked to policy makers in London and Europe)
 - Advise on quality documentation
 - Advise on control plans
 - Help you through the process in the most efficient and cost effective way
 - Your success is our success



Questions



