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COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS
Sub-Committee of Experts on the Transport of Dangerous Goods
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agenda item **2)**

NOTE ON THE PROGRESS MADE ON THE WORK CARRIED OUT BY THE TECHNICAL COMMITTEE ISO/TC 58 *GAS CYLINDERS*

Transmitted by the International Organization for Standardization (ISO)
(Prepared by Dr. Chris Jubb, Chairman of ISO/TC 58)

Overview of the Work Programme

I am pleased to report that ISO/TC 58 is making good progress with its work. The Sub-Committees and Working Groups are supported by experts who are working with purpose towards the goal of global harmonisation. The referencing of standards in the Model Regulations is leading to their ever-wider adoption at national as well as international level. There is, therefore, a clear possibility of developing all the key standards for Class 2 receptacles at ISO level only, leading to the phasing out of differing national standards. Experts who had previously been concentrating on standardisation at the European level are now turning their focus to ISO, applying their experience of harmonisation in the wider field. North American and Asian experts too are realising the enhanced practical importance of TC 58's standards. On the other hand, consolidation in the cylinder manufacturing sector has produced some strains and changes of personnel, but these difficulties are behind us now.

A further pleasing development is than the LPG industry is also stepping up the effort it is applying at the ISO level. Harmonisation in this industry is, however, not without difficulties, notably with some countries taking differing views on the need for specific standards for LPG.

The participation of national standards bodies in the work of ISO/TC58 is shown below

Committee/Sub-Committee		Number of Participating Members	Number of Observer Members
TC58	Gas Cylinders	25	30
TC58/SC2	Gas Cylinders – Cylinder fittings	19	16
TC58/SC3	Gas Cylinders – Cylinder design	20	13
TC58/SC4	Gas Cylinders – Operational requirements	18	11

This is a healthy number of members and show that the work of ISO/TC58 has widespread interest and credibility.

New Developments in ISO/TC 58 of Significance to the Model Regulations

1. Gas cylinders of composite construction

Of the following four new standards, three have been published and a fourth is due for publication this month. We are pleased to see that the Compressed Gases Association has submitted an Inf. paper to this meeting proposing that these standards should be referenced in the Model Regulations, so this report simply records their names, noting that they form a complete suite of standards for cylinders of composite construction.

ISO 11119-1:2002	Gas cylinders of composite construction -- Specification and test methods -- Part 1: Hoop wrapped composite gas cylinders (available in English only)
ISO 11119-2:2002	Gas cylinders of composite construction -- Specification and test methods -- Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners (available in English only)
ISO 11119-3:2002	Gas cylinders of composite construction -- Specification and test methods -- Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-metallic and non-load-sharing metal liners (*To be published ~ July 2002*)
ISO 11623:2002	Transportable gas cylinders -- Periodic inspection and testing of composite gas cylinders.

2. Periodic Inspection

Sub-Committee 4 is revising all its periodic inspection standards. These are key documents for ensuring safety in use and the dialogue between the experts should lead to clear and definitive guidance gathered from the best practice around the world. A key working group is meeting later this week in Geneva to discuss ultrasonic examination in order to build a common understanding of the varying national practices and experience. This should will lead to a section in each of the seamless periodic inspection standards which will facilitate the more widespread use of this powerful technique.

3. Stamp Marking

Stamp marking has latterly been a controversial subject, but the publication of the following standard should diminish the arguments with its practical guidance on complying with the stamp marking regulations.

ISO 13769:2002	Gas cylinders -- Stamp marking (available in English only)

4. Cylinder Valves

ISO 10297:1999 – 'Gas cylinders -- Refillable gas cylinder valves -- Specification and type testing' is currently under revision which will result in it becoming an EN ISO standard (i.e. a combined European and international standard). This standard and its European equivalent are relatively new and this revision will reflect the experience in their use. Standards for gas cylinder valves are important in ensuring designs are sufficiently robust and reliable to ensure safe transport and use. SC2 plans to prepare a standard covering inspection and maintenance of cylinder valves, which is a new topic for standardisation.

5. Published Standards

A full list of ISO/TC 58's published standards is given in the following pages.

ANNEX A
Bibliography

List of Published International Standards from Technical Committee ISO/TC 58

*The titles of standards published since the previous report are shown in **bold***

ISO/TC 58 *Gas cylinders*

ISO 3807-1:2000	Cylinders for acetylene -- Basic requirements -- Part 1: Cylinders without fusible plugs
ISO 3807-2:2000	Cylinders for acetylene -- Basic requirements -- Part 2: Cylinders with fusible plugs
ISO 10286:1996	Gas cylinders -- Terminology (**under revision**)
ISO 11114-1:1997	Transportable gas cylinders -- Compatibility of cylinder and valve materials with gas contents -- Part 1: Metallic materials
EN ISO 11114-2:2000	Transportable gas cylinders -- Compatibility of cylinder and valve materials with gas contents -- Part 2: Non-metallic materials
ISO 11114-3:1997	Transportable gas cylinders -- Compatibility of cylinder and valve materials with gas contents -- Part 3: Autogenous ignition test in oxygen atmosphere
ISO 14600:2000	Gas cylinders -- International quality conformance system-- Basic rules

ISO/TC 58/SC 2 *Gas cylinders - Cylinder fittings*

ISO 407:1991/ Cor.1:1999	Small medical gas cylinders -- Pin-index yoke-type valve connections (**under revision**)
ISO 5145:1990	Cylinder valve outlets for gases and gas mixtures -- Selection and dimensioning (**under revision)**
ISO/TR 7470:1988	Valve outlets for gas cylinders -- List of provisions, which are either standardized or in use
ISO 10156:1996	Gases and gas mixtures -- Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets (**under revision**)
ISO 10297:1999	Gas cylinders -- Refillable gas cylinder valves -- Specification and type testing (NB All gases except LPG) (**under revision**)
ISO 10298:1995	Determination of toxicity of a gas or gas mixture
ISO 10692-1:2001	Gas cylinders -- Gas cylinder valve connections for use in microelectronic industry -- Part 1: Outlet connections
ISO 10692-2:2001	Gas cylinders -- Gas cylinder valve connections for use in microelectronic industry -- Part 2: Specification and type testing for valve to cylinder connections
ISO 10920:1997	Gas cylinders -- 25E taper thread for connection of valves – Specification
ISO 11116-1:1999	Gas cylinders -- 17E taper thread for connection of valves to gas cylinders -- Part 1: Specification
ISO 11116-2:1999	Gas cylinders -- 17E taper thread for connection of valves to gas cylinders -- Part 2: Inspection gauges
ISO 11117:1998	Gas cylinders -- Valve protection caps and valve guards for industrial and medical gas cylinders -- Design, construction and tests
ISO 11191:1997	Gas cylinders -- 25E taper thread for connection of valves to gas cylinders -- Inspection gauges
ISO 12209-1:2000	Gas cylinders -- Outlet connections for gas cylinder valves for compressed breathable air-- Part 1: Yoke type connection
ISO 12209-2:2000	Gas cylinders -- Outlet connections for gas cylinder valves for compressed breathable air-- Part 2: Threaded connections
ISO 12209-3:2000	Gas cylinders -- Outlet connections for gas cylinder valves for compressed breathable air-- Part 3: Adapter for 230 bar valves
ISO 13338:1995	Determination of tissue corrosiveness of a gas or gas mixture
ISO 13340:2001	Transportable gas cylinders -- Cylinder valves for non-refillable cylinders -- Specification and type testing
ISO 13341:1997 Cor.1:1998	Transportable gas cylinders -- Fitting of valves to gas cylinders
ISO 14246:2001	Transportable gas cylinders -- Gas cylinder valves -- Manufacturing tests and inspections

ISO/15245-1:2001	Transportable gas cylinders -- Parallel threads for connection of valves to gas cylinders – Part 1: Specification
ISO/15245-2:2001	Transportable gas cylinders -- Parallel threads for connection of valves to gas cylinders – Part 2: Gauge inspection

ISO/TC 58/SC 3 ***Gas cylinders - Cylinder design***

ISO 3500:1990	Seamless steel CO2 cylinders for fixed fire-fighting installations on ships **(under revision)**
ISO 4706:1989	Refillable welded steel gas cylinders **(under revision)**
ISO 7866:1999	Gas cylinders -- Refillable seamless aluminium alloy gas cylinders -- Design, construction and testing
ISO 9809-1:1999	Gas cylinders -- Refillable seamless steel gas cylinders -- Design, construction and testing -- Part 1: Quenched and tempered steel cylinders with tensile strength less than 1100 MPa
ISO 9809-2:2000	Gas cylinders -- Refillable seamless steel gas cylinders -- Design, construction and testing -- Part2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1100 MPa
ISO 9809-3:2000	Gas cylinders -- Refillable seamless steel gas cylinders -- Design, construction and testing -- Part 3: Normalized steel cylinders
ISO 11118:1999	Gas cylinders -- Non-refillable metallic gas cylinders -- Specification and test methods
ISO 11119-1:2002	**Gas cylinders of composite construction -- Specification and test methods -- Part 1: Hoop wrapped composite gas cylinders (available in English only)**
ISO 11119-2:2002	**Gas cylinders of composite construction -- Specification and test methods -- Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners (available in English only)**
ISO 11120:1999	Gas cylinders -- Refillable seamless steel tubes of water capacity between 150 l and 3000 l -- Design, construction and testing
ISO 11439:2000	Gas cylinders -- High-pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles
ISO/TR 12391-1: 2001	**Gas cylinders -- Refillable seamless steel -- Performance tests -- Part 1: Philosophy, background and conclusions**
ISO/TR 13763:1994 (Cor. 1:1996 English only)	Safety and performance criteria for seamless gas cylinders

ISO/TC 58/SC 4 ***Gas cylinders - Operational requirements for gas cylinders***

ISO 32:1977	Gas cylinders for medical use -- Marking for identification of contents **(under revision)**
ISO 6406:1992	Periodic inspection and testing of seamless steel gas cylinders **(under revision)**
ISO 7225:1994	Gas cylinders -- Precautionary labels **(under revision)**
ISO 10460:1993	Welded carbon steel gas cylinders -- Periodic inspection and testing **(under revision)**
ISO 10461:1993	Seamless aluminium alloy gas cylinders -- Periodic inspection and testing **(under revision)**
ISO 10462:1994	Cylinders for dissolved acetylene -- Periodic inspection and maintenance (corrected and reprinted 1995) **(under revision)**
ISO 10463:1993	Cylinders for permanent gases -- Inspection at time of filling **(under revision)**
ISO 11113:1995	Cylinders for liquefied gases (excluding acetylene and LPG) -- Inspection at time of filling **(under revision)**
ISO 11372:1995	Cylinders for dissolved acetylene -- Inspection at time of filling **(under revision)**
ISO 11621:1997	Gas cylinders -- Procedures for change of gas service
ISO 11623:2002	**Transportable gas cylinders -- Periodic inspection and testing of composite gas cylinders**
ISO 11625:1998	Gas cylinders -- Safe handling
ISO 11755:1996	Cylinders in bundles for permanent and liquefied gases (excluding acetylene) -- Inspection at time of filling **(under revision)**
ISO 13769:2002	**Gas cylinders -- Stamp marking (available in English only)**
ISO 13770:1997	Aluminium alloy gas cylinders -- Operational requirements for avoidance of neck and shoulder cracks