



World Meteorological Organization  
Organisation météorologique mondiale

Secrétariat

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Weather • Climate • Water  
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Our ref.: 8708-16/OBS/OSD/IMOP/RSB

GENEVA, 29 January 2016

Annexes: 2 (available in English only)

Subject: Assessment of the current status, the use and future role of the Regional Standard Barometers/Regional Barometric Standards

Action required: To submit to the WMO Secretariat before **25 February 2016**, a completed assessment form (Annex II)

Dear Sir/Madam,

Traceability assurance of measurement and calibration results is a key concern of WMO, as this plays a very important role for many application areas, ranging from the assessment of climate variability and climate changes, to aspects that may have a strong economic and legal impact; in the context of warnings issued for severe weather, to protect lives and livelihoods.

The regional associations have designated Regional Standard Barometers (RSBs) (Annex I), as barometric standards to support WMO Members in ensuring the traceability of pressure measurements under their responsibility. Most of these RSBs were designated in the 1960s to 1980s and current knowledge suggests that most of them are likely to be mercury barometers. Hosts of RSBs had also been tasked to organize regional comparisons of the national standard barometers with the regional standard barometers, at least once every 10 years, and to report the results of the comparisons to the WMO Secretariat for communication to all Members concerned (*Manual on the Global Observing Systems: Volume I – Global Aspects* (WMO-No. 544) paragraphs 3.3.2.7 and 3.3.2.8).

Subsequently, Regional Instrument Centres (RICs) have been designated by regional associations to assist Members of their Region in calibrating their national meteorological standards and related environmental monitoring instruments (CIMO Guide Part I, Chapter 1, Annex 1A).

Furthermore, all the measurements made worldwide, should be traceable to an internationally defined and accepted reference, in most cases the International System of Units (SI), whose technical and organizational infrastructure was developed and is maintained by the Bureau International des Poids et Mesures (BIPM). Maintenance of national standards and dissemination of traceability at the national level relies on National Metrology Institutes (NMIs), or Designated Institutes (DIs). The framework through which NMIs/DIs demonstrate the international equivalence of their measurement standards and their calibration and measurement certificates is known as the CIPM Mutual Recognition Arrangement (CIPM MRA). WMO is a signatory of this arrangement. Within a country, traceability is ensured by the calibrations at accredited calibration laboratories, and or at NMIs/DIs.

To: Permanent Representatives of the WMO Members hosting RSBs

cc: President of CIMO )  
Presidents of regional associations ) (for information)

The CIMO Expert Team on Operational Metrology (ET-OpMet), at its last meeting in Ljubljana, in December 2015, reviewed the need for the systems of WMO Regional Standard Barometers, of classification of the categories of barometers, and of regional barometer comparisons to the RSBs (CIMO Guide, Part I, Chapter 3, 3.10). ET-OpMet noted the absence of information on any recent assessments and outcomes of regional barometer intercomparisons.

ET-OpMet are aware that a concept of RSBs was needed in the past but also agreed that currently the traceability of atmospheric pressure measurements to the SI units, can be efficiently and economically provided through an unbroken traceability chain, starting from BIPM, through NMIs/DIs, accredited RICs, or other accredited laboratories to the field instruments. ET-OpMet expressed its concern that the existence of these two parallel systems for traceability of atmospheric pressure measurements can be uneconomical and inefficient.

In this context, the WMO Secretariat hereby seeks clarification from WMO Members hosting RSBs, to assess the current status, use and future role of the RSBs, by filling out the assessment form developed by ET-OpMet (Annex II). The outcome of the self-assessment will be reviewed by ET-OpMet to develop relevant recommendations to WMO constituent bodies on possible amendments to relevant WMO Manuals and Guides.

The completed forms signed off by the Permanent Representative of WMO should be sent to the WMO Secretariat, for the attention of Dr Isabelle Ruedi (H/IMO), by fax: +41 22 730 8181, or by e-mail: [iruedi@wmo.int](mailto:iruedi@wmo.int), or by regular post, as soon as possible, **but not later than 25 February 2016**.

May I once again take the opportunity to express my appreciation for the support you have been providing to WMO Members by hosting these facilities that lead to the provision of quality observations meeting the requirements of all WMO Programmes.

Yours faithfully,



(J. Lengoasa)  
for the Secretary-General

# WORLD METEOROLOGICAL ORGANIZATION

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8708-16/OBS/OSD/IMOP/RSB, ANNEX I

## LIST OF REGIONAL STANDARD BAROMETERS

(CIMO Guide, Part I, Chapter 3, Annex 3.B)

WMO Region	Location	Category <sup>1</sup>
I	Cairo, Egypt	A <sub>r</sub>
	Casablanca, Morocco	A <sub>r</sub>
	Dakar, Senegal	A <sub>r</sub>
	Douala, Cameroon	A <sub>r</sub>
	Kinshasa/Binza, Democratic Republic of the Congo	A <sub>r</sub>
	Nairobi, Kenya	A <sub>r</sub>
	Oran, Algeria	A <sub>r</sub>
II	Calcutta, India	B <sub>r</sub>
III	Buenos Aires, Argentina	B <sub>r</sub>
	Maracay, Venezuela (Bolivarian Republic of)	B <sub>r</sub>
	Rio de Janeiro, Brazil	A <sub>r</sub>
IV	Miami, Florida, United States (subregional)	A <sub>r</sub>
	San Juan, Puerto Rico (subregional)	A <sub>r</sub>
	Toronto, Canada (subregional)	A <sub>r</sub>
	Washington DC (Gaithersburg, Maryland), United States	A <sub>r</sub>
	Guatemala City, Guatemala (subregional) <sup>2</sup>	
	Mexico D.F., Mexico (subregional) <sup>2</sup>	
	Silver Spring, Maryland, United States (subregional) <sup>2</sup>	
V	Melbourne, Australia	A <sub>r</sub>
VI	London, United Kingdom	A <sub>r</sub>
	St Petersburg, Russian Federation	A <sub>r</sub>
	Toulouse, France	A <sub>r</sub>
	Hamburg, Germany	A <sub>r</sub>

<sup>1</sup> For category definitions, see CIMO Guide, Part I, Chapter 3, 3.10.5.1.

<sup>2</sup> Not mentioned in CIMO Guide, but in Manual on GOS (Volume II)

**Assessment of the current status and future role of  
the Regional Standard Barometers (RSBs)**

(Note: The term “standard barometer” is used throughout the Manual on GOS (Volume I) and CIMO Guide, while the term “barometric standard” is used in the Manual on GOS (Volume II))

**WMO Member Country:**

**Name of the Institute hosting RSB:**

**1) Is your Regional Standard Barometer a mercury barometer?**

☐ **Yes**                      ☐ **No**

**2) Please, provide following details of your Regional Standard Barometer:**

Name:

Manufacturer:

Type:

Serial Number:

**3) Is your Regional Standard Barometer traceable to SI?**

☐ **Yes**                      ☐ **No**

**4) Date of the last calibration:**

**5) Last calibration was performed at (please, specify the name):**

☐ **NMI/DI:**

☐ **RIC:**

☐ **Accredited ISO/IEC 17025 laboratory:**

☐ **Other:**

- 6) **Has your Regional Standard Barometer participated in any regional barometer comparisons and/or interlaboratory comparisons?** (Please, specify the events in the last 20 years.)

☐ Yes

☐ No

- 7) **Have you organized any regional barometer comparisons, and/or interlaboratory comparisons, and used your Regional Standard Barometer as a reference for those events?** (Please, specify the events in the last 20 years.)

☐ Yes

☐ No

- 8) **Have you submitted the results of the comparisons from question (7) to the WMO Secretariat?** (Please, provide the titles of the reports, and whenever possible a link to the reports. In case of “Yes” to question (7) and “No” to question (8), please explain why.)

☐ Yes

☐ No

- 9) **Is your Regional Standard Barometer still used for traceability dissemination?** (Please, provide a short explanation.)

☐ Yes

☐ No

- 10) When was your Regional Standard Barometer used for calibration of other Members' barometers last time? (Please, specify the years and the Members for which services have been provided in the last 10 years.)**

- 11) Do you agree that the way of the traceability assurance to the SI units, through an unbroken traceability chain, starting from BIPM, through NMIs/DIs and accredited RICs, or other accredited laboratories to the field instruments, is appropriate for the atmospheric pressure measurements? (If no, please clarify.)**

☐ Yes ☐ No

- 12) Do you agree that formal designation by WMO of regional standard barometers/ barometric standards is not needed anymore and should be discontinued? (If no, please clarify.)**

☐ Yes ☐ No

- 13) Contact details of a person to be contacted for the further communication on this matter:**

Name:

Email:

Tel:

Fax:

Place and date

Permanent Representative with WMO

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(Name and signature)