



International Amateur Radio Union Region 1

2017 General Conference – Landshut, Germany

16 – 23 September 2017



Subject	Contests – MGM Operating Procedures		
Society	RSGB	Country:	United Kingdom
Committee	C5	Paper Number	LA17_C5_48
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1. Introduction

As the use of MGM becomes more common within VHF contests, it is helpful to define a mechanism by which the full contest exchanges can be made using tools such as WSJT in a standard way.

2. Background

Contesters are increasingly making use of digital modes and meteor scatter within contests to make long range QSOs when activity is otherwise low. The standard IARU Meteor Scatter operating procedures do not take account for how to exchange the amount of information required to complete a valid contest QSO. These Guidelines describe a proposal for the standardised use of digital modes in VHF contests and common software to complete a full contest exchange via meteor scatter in a co-ordinated and efficient manner.

3. Key Points and Proposal

This document covers a subset of MGM, modes supported by the WSJT software originally developed by Joe Taylor K1JT, which are sometimes called JT Modes. The MGM definition excludes CW (Morse code), even though it is frequently machine generated, and Digital Voice (DV).

- MGM is now a mainstream mode alongside SSB and CW for the exchange of contest information, facilitated by the widespread and low cost availability of PCs and free software.
- The main purpose of this guide is to provide a protocol for the efficient exchange of contest information when using MGM. However, you will not be penalised for using a different protocol so long as the complete contest exchange only takes place over the air.
- The protocol is an extension of standard meteor scatter procedures to include contest information, and the description is based around the standard WSJT-10 messages and modes (the most commonly used in contests), although the same messages may be used with other Machine Generated Modes such as PSK which are not included in the WSJT suite.
- This Guide does not describe the interconnections between PC and transceiver, since such information is readily available on the internet. All that is required is PTT control via the PC and line in/out connections for transmit and receive audio.
- This Guide does not describe how to set up or optimise the use of MGM software, nor does it compare the merits of different software applications.

What Needs to be Logged

In VHF contests the following needs to be received over the air and logged accurately by both parties to a contest exchange

- both calls
- report
- serial number
- locator

Contest Exchange

a) Standard Exchange

– such as attempting a QSO on a frequency agreed via a chat room such as ON4KST.

As an example, suppose GM4VVX set up a QSO with G8BCG on ON4KST as follows (in practice, this is all much simpler than when written down, and experienced operators will know from the contents of the text box above what to send):

GM4VVX would

- Enter G8BCG's call in his log
- Set up the text box as shown, and send message Tx1 in period 2:

Note that the report of 26 is the default – this would be amended to the actual report prior to transmission of Tx2 or Tx3; once sent it should not be altered during the remainder of the QSO.

The GM4VVX sends a message to the ON4KST chat room such as:

/cq G8BCG Hi Peter, calling you on 70.232 VVX 2nd JT6M

G8BCG should set up the equivalent complementary text box and send the required information (initially Tx1) in period-1:

Again, note that the report of 26 is the default – this would be amended to the actual report prior to transmission of Tx2 or Tx3; once sent it should not be altered during the remainder of the QSO. (Note that the serial number to be sent is in the normal sequence of contest serial numbers). Once he is transmitting in period-1 G8BCG might respond with a message via ON4KST such as:

/cq GM4VVX RR Clive, now running

Upon receipt of both calls, G8BCG should

- Enter GM4VVX in his log, and also the locator if received
- Send calls, report and serial number (in this case 005) (his Tx2):
GM4VVX G8BCG 26 005 26 005

When this information is received, GM4VVX will

- Log the received report as 26 and the serial number as 005 in his log
- Respond with (Tx3):

G8BCG GM4VVX R26 001 R26 001

The R is added to confirm receipt of the report and serial number, with the full calls sent again. When received correctly, G8BCG would

- Log the received report as 26 and the serial number as 001 in his log

(note that the R is not logged, since it is the equivalent of “Roger” in SSB QSOs and is not a part of the report).

- Respond with (his Tx4):
RRRR IO70RK G8BCG

The RRRR is confirmation of the acknowledgement of receipt of report and serial number. The full locator added with the RRRR as there is space in this Tx box. At this stage G8BCG may be shortened to BCG so the information may be passed more quickly.

Once GM4VVX has received the locator, he has everything he needs, and would

- Enter the locator in his log book if not entered earlier
- Respond with:
73 IO78TA GM4VVX
or
73 IO78TA VVX

this confirms receipt of all required details, including locator; the full locator is added again as extra in case the other operator had not copied it earlier.

When he receives this message, G8BCG

- Logs the locator in his log book (if not previously received)
- Responds in one of the following ways by sending
73 IO70RK BCG
or
CQ G8BCG IO70RK

or a posting on ON4KST such as:

/cq GM4VVX tnx FB QSO Clive 73 GL

This confirms that G8BCG has also received all the information, including locator.

The contest QSO is now complete.

Notes:

- i) The example QSO above assumes that G8BCG copies both call-signs first – if GM4VVX copies both calls before receiving a report from G8BCG, he responds with Tx2, and so on (roles reversed).
- ii) Reports such as 26 are standard MS reports (see Appendix). However, on tropo paths it is permissible to use RS signal reports such as 54.

- iii) If long call-signs are in use, the report and serial number might only be sent once in Tx2 or Tx3 to fit into the available space, e.g. MM6BYZ/P GM4VVX/P R26 005
- iv) Be aware that some operators may use a different protocol, for example some may add the serial to the RRRR or 73s so that it reads like RRRR 001 JO45VV or 73 001 JO45VV OE

b) Responding to CQ (as sent in Tx6 above)

Note: When not on a calling frequency or centre of activity, the response should start with Tx2 and follow the sequence shown above.

4. Recommendation

To incorporate this MGM Operating Procedure for Contests into the Handbook