



INTERNATIONAL TELECOMMUNICATION UNION

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TELECOMMUNICATION
STANDARDIZATION SECTOR
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R.73

TELEGRAPHY

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**MAINTENANCE MEASUREMENTS
TO BE CARRIED OUT ON VFT SYSTEMS**

ITU-T Recommendation R.73

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation R.73 was published in Fascicle VII.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation R.73

MAINTENANCE MEASUREMENTS TO BE CARRIED OUT ON VFT SYSTEMS

(former CCIT Recommendation B.35, 1951; amended at New Delhi, 1960;
Geneva, 1964; Mar del Plata, 1968 and Malaga-Torremolinos, 1984)

The CCITT,

in view of

Recommendation R.72 on the periodicity of maintenance measurements to be made on international voice-frequency telegraph (VFT) channels,

considering

that it should be clearly laid down what maintenance measurements are indispensable to ensure the correct operation of VFT channels,

unanimously declares the view

(1) that maintenance measurements and any necessary adjustments of *amplitude-modulated* VFT channels should be made in the following order:

- a) the power supply voltages;
- h) the value of the frequency transmitted to line by the channel;
- c) the output level of each send filter in condition Z and in condition A;
- d) the output level of each send filter after the control current has been interrupted;
- e) the output level of each receive filter in condition Z;
- f) the degree of distortion with sequences of significant intervals each having a duration of one or two unit intervals. (It would be advisable for this measurement to be made at normal, maximum and minimum levels. All the modifications of level should be made after the receive filter.) The measurement and adjustments may be first carried out on local and then on line, or on line only, so as to minimize the degree of distortion;
- g) the receiving relay if any (if the results obtained at point f) should make this desirable);
- h) the threshold of the receiver;
- i) the degree of distortion, in accordance with the method described in Recommendation R.5 and bearing in mind § (1) and § (2) of Recommendation R.74;

(2) that maintenance measurements and any necessary adjustments of *frequency-modulated* VFT channels should be made in the following order:

- a) the power supply voltages;
- h) the values of the frequencies transmitted to line by the channel;
- c) the frequency emitted after the control current has been interrupted;
- d) the output levels of each send filter for the characteristic frequencies A and Z;
- e) the output levels of each receive filter for the characteristic frequencies A and Z, if possible;
- f) the frequency drift, if the channel is used for this measurement (see below);
- g) the degree of distortion with sequences of significant intervals each having a duration of one or two unit intervals; the measurement and adjustment should be first carried out on local and then on line, or on line only, so as to minimize the degree of distortion;

- h) the receiving relay, if any;
- i) the threshold of the receiver (at blocking);
- j) the degree of distortion, in accordance with the method described in Recommendation R.5 and bearing in mind § (1) and § (2) of Recommendation R.74.

The measurement referred to in f) above must be carried out to check, where necessary, whether there is any frequency drift on the VFT bearer circuit by measuring the pilot frequency when the system is operated with one; otherwise, Administrations should agree to measure a characteristic frequency at the output of the line for a mutually determined channel. The result of this measurement will be compared with the result of the measurement made when this frequency is sent; the difference will show any drift due to transmission on the VFT bearer circuit;

(3) that, unless otherwise specified, the measurements should be effected at the nominal modulation rate of the channel (50, 100 or 200 bauds). However, if a 100-baud channel is operated with a rate of 50 bauds, in accordance with Recommendation R.35 *bis*, the measurements should be effected at the rate of 50 bauds and adjustments made if the limits mentioned for 50 bauds in Recommendation R.57 are no longer respected;

(4) that the results of the measurements made on the international channels should be exchanged directly by telegraph or telephone between the measuring stations, at the request of one of these stations;

(5) that, since maintenance work is a cause of interference on circuits in service, maintenance measurements should be made outside busy hours as far as possible;

(6) that, when maintenance measurements are carried out on circuits in operation, every precaution should be taken in accordance with Recommendation R.76 to avoid disturbances.