INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

P.35

TELEPHONE TRANSMISSION QUALITY

SUBSCRIBERS' LINES AND SETS

HANDSET TELEPHONES

ITU-T Recommendation P.35

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation P.35 was published in Volume V 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 P.35

HANDSET TELEPHONES

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988)

1 Transmission characteristics

The transmission plan for international telephone connections is given in Recommendation G.101.

Recommendations G.111 and G.121 deal with the transmission quality, i.e. loudness ratings for international and national telephone connections, respectively.

These Recommendations permit administrations to split the requirements between analogue telephone sets and the other parts of the network as long as the overall specifications are fulfilled.

Therefore no precise specifications can be given for analogue telephone sets, although some design considerations can be provided. The latter are contained in Supplement No. 10.

Recommendations for digital telephones are found in Recommendation P.31.

2 Handset dimensions

The shape and the dimension of the handset have an important influence on both send and receive levels. The earpiece must be capable of forming a good seal to the ear and the handgrip of the handset must be such that it will encourage the user to hold it to the head in the optimum position.

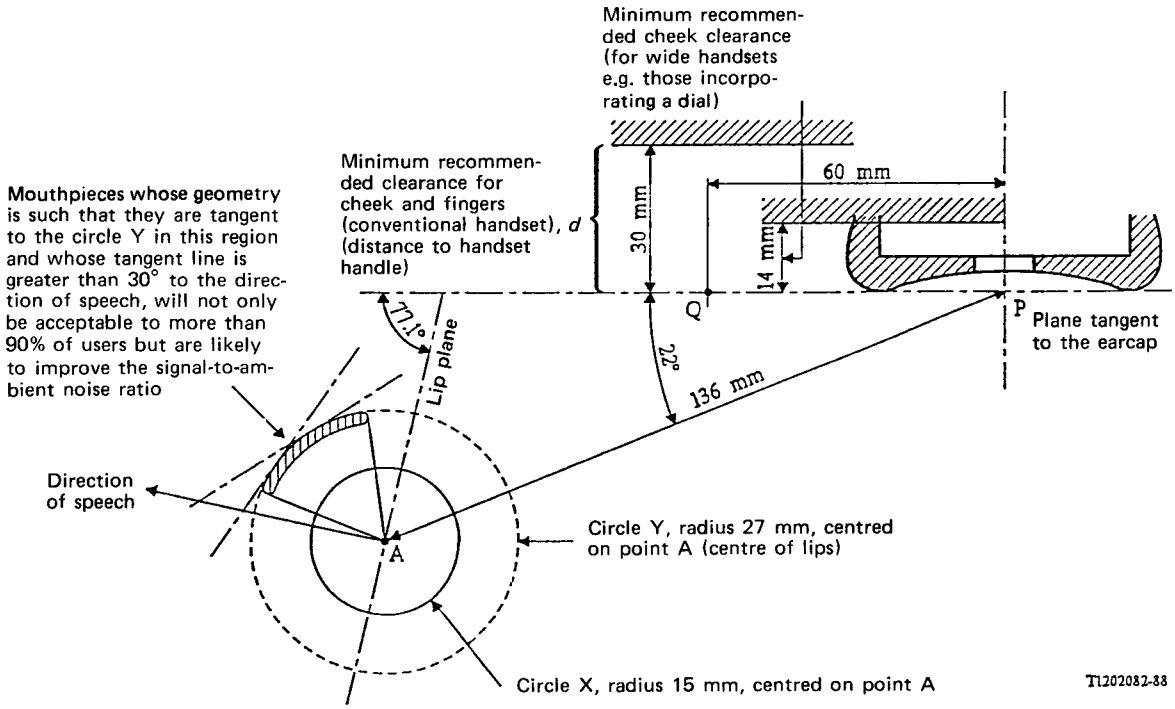
Reference [1] is an ergonomic study which presents data on the distribution of the relevant finger and head dimensions.

A later head dimension study carried out in the People's Republic of China is reported in [2]. A subsequent investigation [3] shows that, for convenience in use, the mouthpiece of the handset should be somewhat outside (e.g. 10-12 mm) a circle enclosing the centre of the lip of 80% of the subjects tested (over 4000). A handset conforming to these dimensions (see Figure 1/P.35) will then be acceptable to more than 90% of users. When a longer lip-to-mouthpiece distance is chosen, the signal-to-ambient-noise ratio will be worse and recommended LSTR values will be more difficult to meet (see Recommendations G.121, P.11, P.76, P.79 and Supplement No. 11). Therefore both signal-to-ambient-noise ratio and mouthpiece position for convenient use must be considered and probably a compromise must be made.

3 Recommendation on handset

Based on the information given above, the CCITT recommends that handset telephones conform to the dimensions outlined in Figure 1/P.35, with respect to mouthpiece positions and cheek-to-handset clearance.

Note – An earpiece with a design that forms a good seal to the IEC 318 ear (Recommendation P.51) will facilitate testing both in laboratories and during manufacturing. Experience has shown that earpieces with a good seal to the IEC 318 artificial ear also give in most cases a good seal to the human ear.



Note 1 – Point A is located at the centre of circle X which enclosed 80% of lip positions of the subjects tested [2], [3].

Note 2 – The circle Y encloses the ellipse given in [1].

FIGURE 1/P.35

References

[1] CCITT – Contribution COM XII-No. 49 (ITT), Study Period 1973-1976.

[2] CCITT – Contribution COM XII-No. 21 (People's Republic of China), Study Period 1977-1980.

[3] CCITT – Contribution COM XII-No. 112 (People's Republic of China), Study Period 1977-1980.

Bibliography

CCITT – Contribution COM XII-No. 32 (U.K), Study Period 1973-1976.