

Acoustical Analysis of Initial Transients in Flute-Like Instruments.

M. Castellengo

Pour lire l'article avec les exemples sonores il faut consulter **Acta acustica** :

N°85 (3)pp.387-400 [1999] pour le texte de l'article;

N°87 (2)[2001] pour le disque d'exemples sonores;

N°87 (3) pp. V-VII [2001] pour la liste des exemples sonores;

N°87 (4) pp. 519-520 [2001] pour les errata de la table des exemples sonores.

Errata

Acoustical Analysis of Initial Transients in Flute-Like Instruments, Sound Samples

Michèle Castellengo

LAM - Laboratoire d'Acoustique Musicale, Univ. Paris 6 - CNRS - Ministère de la Culture, 11 Rue de Lourmel - 75015 Paris

In Acustica 87(3), V-VII, a table of contents of the Audio-CD enclosed in that issue has been given. Unfortunately, the following contribution which had been submitted by the author for clarification was erroneously omitted and is therefore repeated here completely. We deeply apologize for this error.

All figure numbers refer to the original article except Figures I and II which can be found here on the next page.

The sound examples presented here are related to the analysis presented in the paper "Acoustical Analysis of Initial Transients in Flute-Like instruments" printed in a previous issue of Acta Acustica, Vol. 85 (1999) p.387-400. The figure numbers given in parenthesis refer to the corresponding sound analysis of this paper. In addition, two new analyses are proposed.

Sample 71 – The sound of the organ pipe (Figure 1) is repeated twice.

Sample 72 – The beginning (600 ms) of the same diaphragm pipe sound (Figure 2) has been stretched, by means of a phase vocoder analysis and synthesis software (Audiosculpt). This time makes it possible to hear all the complex events occurring during the transient. We hear successively: a) the normal transient; b) the transient expanded twice; c) the transient expanded 3 times.

Sample 73 – Comparison between the tone quality of a recorder's transient and the corresponding edge tone produced at the same pressure. The recorder is played with the help of a windchest (Figures 3 and 4). We hear first the sound produced by the whole recorder (parts A+B), then the edge tone produced by the part A alone (the mouth) and finally the recorder again. Each part is repeated 3 times.

Sample 74 – On this experimental recorder (Figure 4) it is possible to separate the mouth (part A) from the tube. By increasing air pressure, we hear the mouth edge tones growing in frequency and in intensity, with a jump from the first to the second hydrodynamic mode. On the Figure I below, one may compare the mouth graphs (left) and the spectral analysis of the edge tone glissando.

Sample 75 – Mouth tones which appear during the transient are, like the edge tones, very sensitive to the pressure variations. In this example we have recorded the same pipe organ played at three different static pressure, and the corresponding edge tones produced when the pipe is filled with cotton wool (Figure 6). For each pressure value we hear first

