



FIG. 12. Composite chart for the note "D₅" in the "clarinet" register.

the seventh harmonic, and it was noted that the seventh harmonic also showed the largest variation among the instruments. More investigation is needed to determine whether this variation is at all significant.

The five clarinets used above were augmented by two more—one Buffet and one Selmer—obtained from a local musical-instrument dealer. Both were of French manufacture and were claimed by the dealer to be very good instruments. All seven clarinets were played by the woodwind instructor at the University. For the playing tests, the identifying marks on the clarinets were covered and the player was not told which model he was testing, in order to at least try to keep natural bias to a minimum. Under these conditions, all the

is contemplated, to see if any decisive characteristics can be found in its resonance curves.

V. CONCLUSION

The full-length clarinet has a number of resonances, of which the first three have frequencies matching reasonably well the first three odd harmonics of the internal standing wave. These harmonics are therefore strong, and the second harmonic absent. As the effective length of the instrument is shortened by opening side holes, the number of significant resonances decreases, and with it the number of harmonics. For the highest note in the low register (the highest "throat" tone), there are only two strong resonances and hence