

Comes and Goes

Pieces for Amplitude Modulated Sounds

For 4 or more performers using electronic or acoustic instruments

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Any number of pieces may be played in any order, with or without pauses in between. Pieces may be repeated. Pieces may also run together with one or more performers beginning the next piece as the other performers finish the previous one. In this case, the transition period between pieces should last no longer than 1/4 the duration of either adjacent piece.

Piece durations are indeterminate. Performers should work out their own system for beginning and ending pieces and transitioning between them as appropriate.

Pitches and volumes are specified using general terms such as high and low or loud and quiet. These designations are to be interpreted in a manner appropriate to the characteristics of the ensemble.

Performers using electronics may employ standard synthesis hardware or software. Performers may construct their own hardware or software instruments. Performers may use any interface to control their instrument (e.g., piano-style keyboard, alphanumeric keyboard, knobs, sliders, pedals). Performers may choose to automate control of their instrument. Instruments must be able to produce a variety of pitches/frequencies and amplitudes. They must have controls for amplitude modulation (AM) with modulation rate controllable over a range from 0Hz to over 40Hz and modulation depth controllable over a range from 0% (no AM of carrier signal) to 100% (carrier signal fully modulated). The AM waveform should be a sine wave or any other simple periodic, continuous waveform. The carrier should use a simple, periodic waveform (sine, triangle, saw) appropriate to blend with the timbre of the other performers. See figure 1 for an example of a simple AM instrument.

Performers using electronic instruments are encouraged to slightly vary parameters in addition to the ones specified in order to avoid a sterile and "knobby" sound. For example, changes in AM rate might be accompanied by slight changes in volume or pitch. These additional parameter changes may be controlled manually or automated using any appropriate modulation source (e.g., keyboard tracking, LFO)

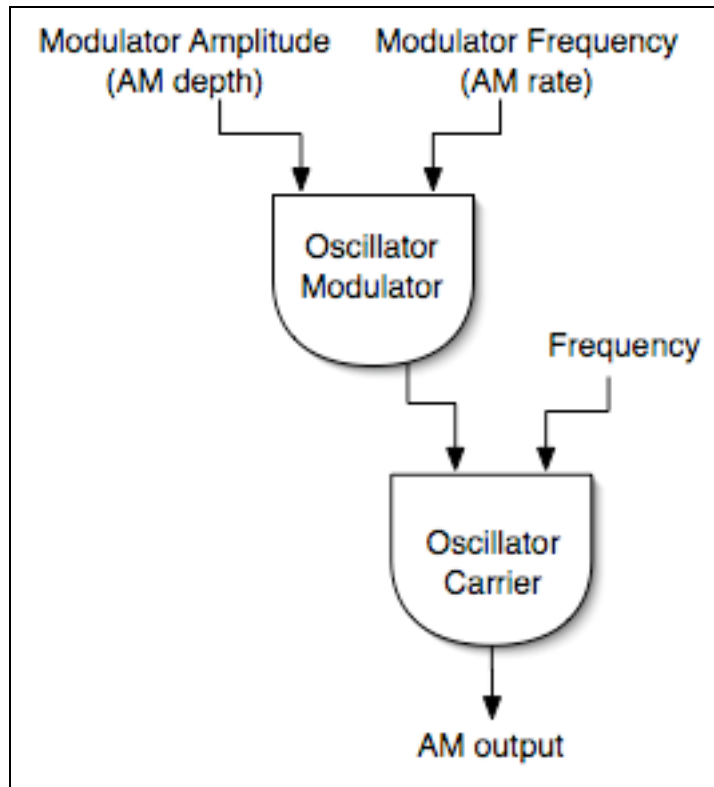


Figure 1: Simple AM instrument

Performers using acoustic instruments should replicate tremolo-rate AM to the extent possible with traditional techniques (e.g., tremolo, bowing). Audio-rate AM should be replicated using suitable non-traditional techniques (e.g., multiphonics, overpressure bowing, singing while playing, false fingerings).

Performers using acoustic instruments should attempt to blend with the electronic sounds, replicating their precision and uniformity as much as possible by minimizing excessive vibrato, sudden timbral shifts, or other expressive coloration.

The scores for each piece follow this format: title, general instructions that apply throughout the duration of the piece, a box containing moment-to-moment instructions or procedures (these instructions are often repeated during the piece), and suggestions for performance.

Foothills

Medium quiet to medium loud

All performers begin and end together on unison or near-unison low pitch

- Continuously adjust
 - AM rate between 0.05 - 1Hz
 - AM depth between 50 - 100%

Attempt to match AM depth and/or AM rate to another performer's AM depth and/or AM rate

Unmatched set of revolving doors

AM depth = 100%

- Play any medium pitch with any AM rate between 0.01 - 2Hz at any volume between quiet and loud
- Whenever amplitude reaches 0
 - Continue or
 - Rest for any duration
- Repeat or End

Avoid sudden attacks when beginning new sounds.

I Send the Rockets Up

Loud

AM depth = 100%

- Play a low pitch with any AM rate in the tremolo range approx. 1Hz-10Hz
- Over 2-8 seconds:
 - Portamento slide to a higher pitch
 - Portamento slide to an AM rate in the audio range, i.e. > 20Hz
 - Fade out -- Ramp to 0 amplitude
- Rest for 0-4 seconds
- Repeat or End

Try different ramp shapes for pitch, AM rate and amplitude (e.g. linear, exponential, logarithmic).

Constant Interference

Medium loud to loud

All performers begin and end together

- Make sudden irregularly spaced changes of frequency between 5000 - 12000Hz and/or AM rate between 500 - 700Hz to produce a composite tone of maximum variety.
- AM depth may vary from 50 - 75%.

The sound is composed of the changes and not interrupted by them.

Cirrus - lock of hair

Quiet

Choose any high pitch for the duration of the piece.

Choose any AM rate between 0.05 – 0.1Hz for the duration of the piece.

- Play a sound with any AM depth between 10 – 30%
- Rest for any duration
- Repeat or End

Avoid sudden attacks when beginning new sounds. Pay attention to phasing among sounds.