ABOUT CORAIL(CORAL) 2010
for Bb Tenor Saxophone

CORAIL(CORAL) is an interactive computer music environment for tenor or soprano saxophone. The program runs on a Macintosh computer using Max/MSP. The work exploits the possibilities of real-time pitch, gesture, and dynamic envelope tracking. The piece is designed for an instrumentalist equipped with a wireless microphone in order to enable free movement throughout a concert hall or in the open air during performance.

Signal from the microphone source is an analyzed by the software and used to produce the electro-acoustic result.

There is no pre-defined score for CORAIL(CORAL). There exists a set of "environments" that function collectively and can be called by the saxophonist at any time.

Learning CORAIL involves mastering and memorizing each individual function of the program. There is no traditional score for the work. Instead, there is a series of exercises to familiarze the peformer with each function of the software. Once each individual function has been rehearsed and internalized by the performer, then the functions can be grouped to eventually include the entire set of functions working globally. In CORAIL, all funtions are working globally at all times and it is the work of the performer to add, mix and overlap the material to create a lush and balanced electro-acoustic atmosphere in which to perform and continually generate more material.

CORAIL software is very sensitive to dynmaic/loudness levels of the live saxophone. The performer can control the level of the electronics with the loudness of playing. If the performer stops playing, the electronics of CORAIL will slowly die away to a very quiet level. When the performer plays the loudness of the electronics will increase to meet the level of the player. The performer can use this dynamic control function to great effect -- it should be rehearsed considerably.

CORAIL software keeps track of how often a player chooses to call a particular function or effect. When a performer continually calls an effect the software will interpret this as a cue to begin generating the same effect automatically and beyond the control of the performer. Once this is launched it take several seconds to complete and will be beyond the control of the performer.

Built into the compositional space is a notion of acceptable and expected error. Sometimes the computer will miss a cue that the performer has initiated, but this doesn't disturb the "enviroment". The peformer should simply carry forward and play continuously allowing the various effects to overlap and blur for the audience the relationship of performer to electronics. Nevertheless, the performer stays in full control of the overall environment from beginning to end.

CORAIL is designed for multi-channel surround sound with the ideal location of the live saxophone being in the center of a hall not the frontal proscenium. With the addition of a wireless microphone the performer can move and turn in different directions to allow the sound source to be spatialized in real-time and better mix with the electronics.

CORAIL(CORAL)

Functionality1: RECORD/PLAY

Motivic cues combined with silence detection determine the real-time recording and playback function in CORAIL.

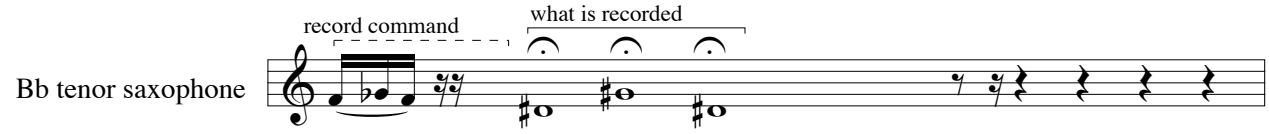
A single rising or falling half-step figure in any register followed by an interval of silence will cause the next non-silent event to be recorded.

Once recording has begun, it will continue until the next silence is deteteted.

Recorded phrases are automatically played backed and processed.

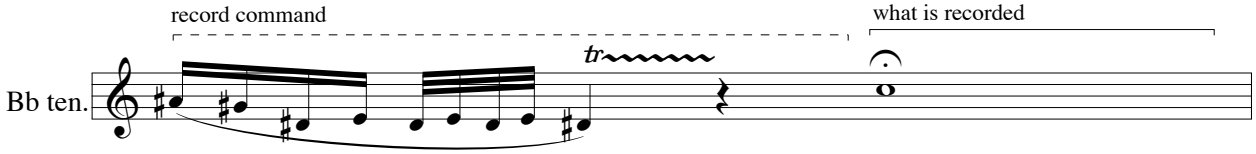
The duration/tempo of the half-step(s) is flexible and the half-step figure must always be legato.

EXAMPLE 1: only the three whole notes are recorded and processed.



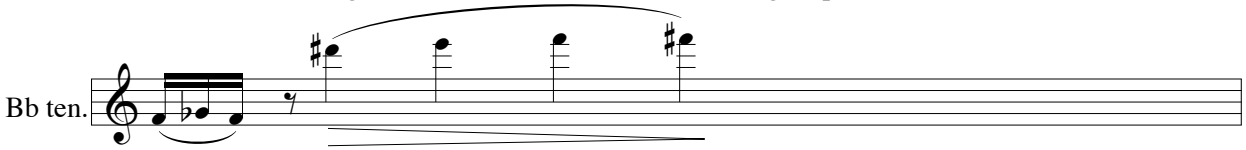
The recorded phrase is played back in a five-voice "chorus" that includes the unaltered original recording along with four transposed versions of the original.

EXAMPLE 2: The half-step record command will function with multiple iterations of the half-step, or as a half-step trill. Other pitches can appear before the half-step, embedding the half-step(s) into a musical phrase.



EXAMPLE 3: Recorded pitches that sound more than one octave above middle C (midi #60) are automatically mixed with a synthesized "double".

A fast half-step trill with high notes creates a distorted and electronic response, whereas a slow half-step in the lower and medium ranges creates a more "natural" sounding response.

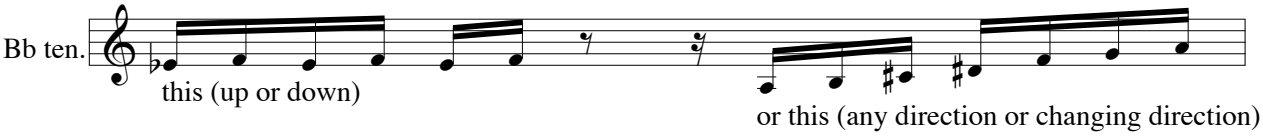


THE INSTRUMENTALIST HAS INFLUENCE OVER PLAYBACK.

The faster the speed of the half-step the larger the range of transposition on the transposed voices.
The average time between half-step(s) determines when members of the "chorus" enter.
Fast half-steps will cause all the voices of the playback to appear almost simultaneously.
Slow half-step(s) will lengthen the arrival time proportionally.
The output level of playback is controlled by the saxophone input level.
If the saxophone is silent then the output level will gradually drop to a very soft level.
If the saxophone plays, then the pre-recorded output will rise to match the current level of the saxophone.

There are two alternating playback buffer systems in CORAIL.
IT TAKES TWO RECORDINGS TO FULLY REPLACE ALL BUFFERS.

EXAMPLE 4: 3-4 whole-tone pairs will extinguish all currently playing voices.
whole tone scales are highly recommended and for security use 5 or 6 whole tones.
CAUTION. once engaged it takes the patch about 4-5 seconds before all the voices are silenced.
Record and play will be disabled until the process is complete.



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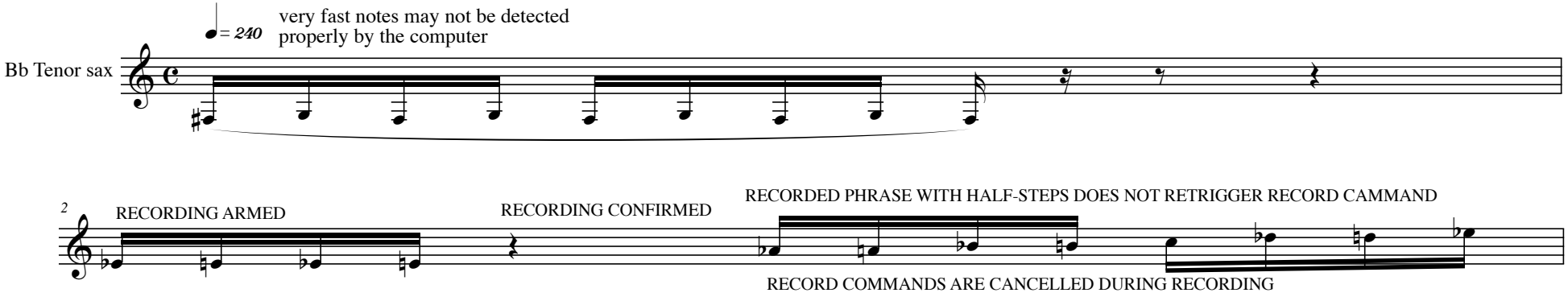
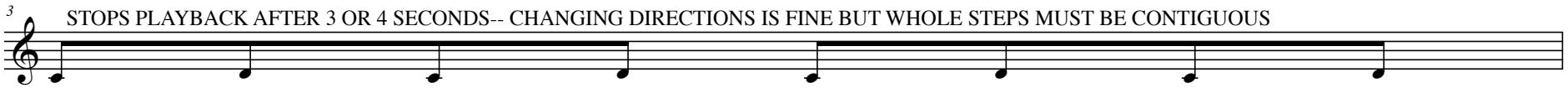
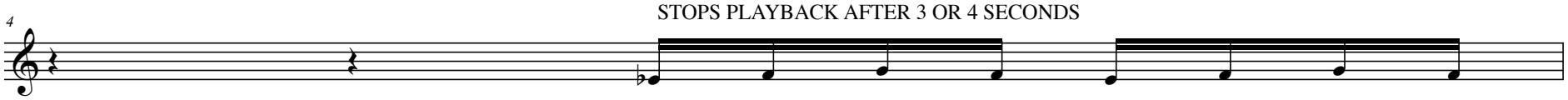
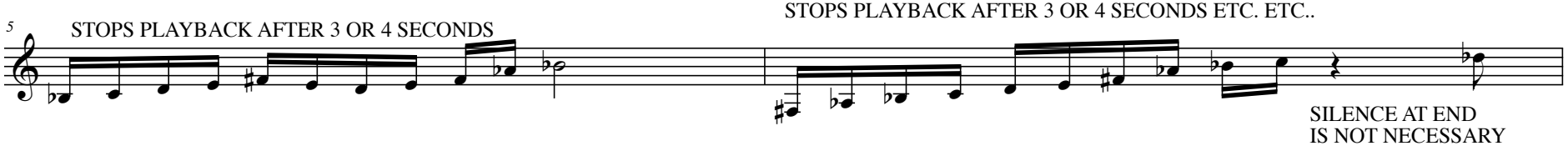
CORAIL PHRASE HELP

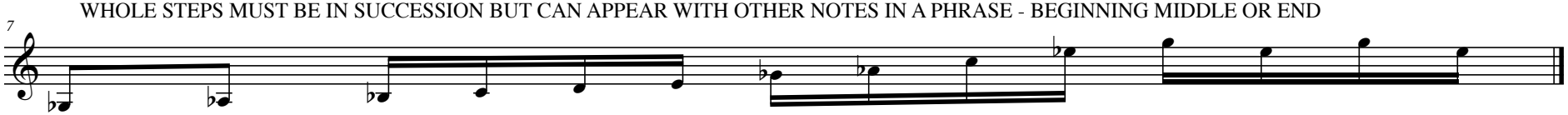


STOP PLAYBACK COMMAND REQUIRES AT LEAST 4-6 WHOLE STEPS IN ANY DIRECTION OR SPEED (BUT NOT TOO FAST!!!)









SUBTLE POINT: IT IS NOT NECESSARY TO MAKE THE WHOLE STEP COMMAND "FEEL" LIKE A CALL TO STOP PLAYING. A PLAYER CAN EMBED THE EFFECT IN A QUITE CONTINUAL PHRASE AND THE COMPUTER WILL RESPOND IN THE SAME WAY.

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Functionality3: CALL and RESPONSE

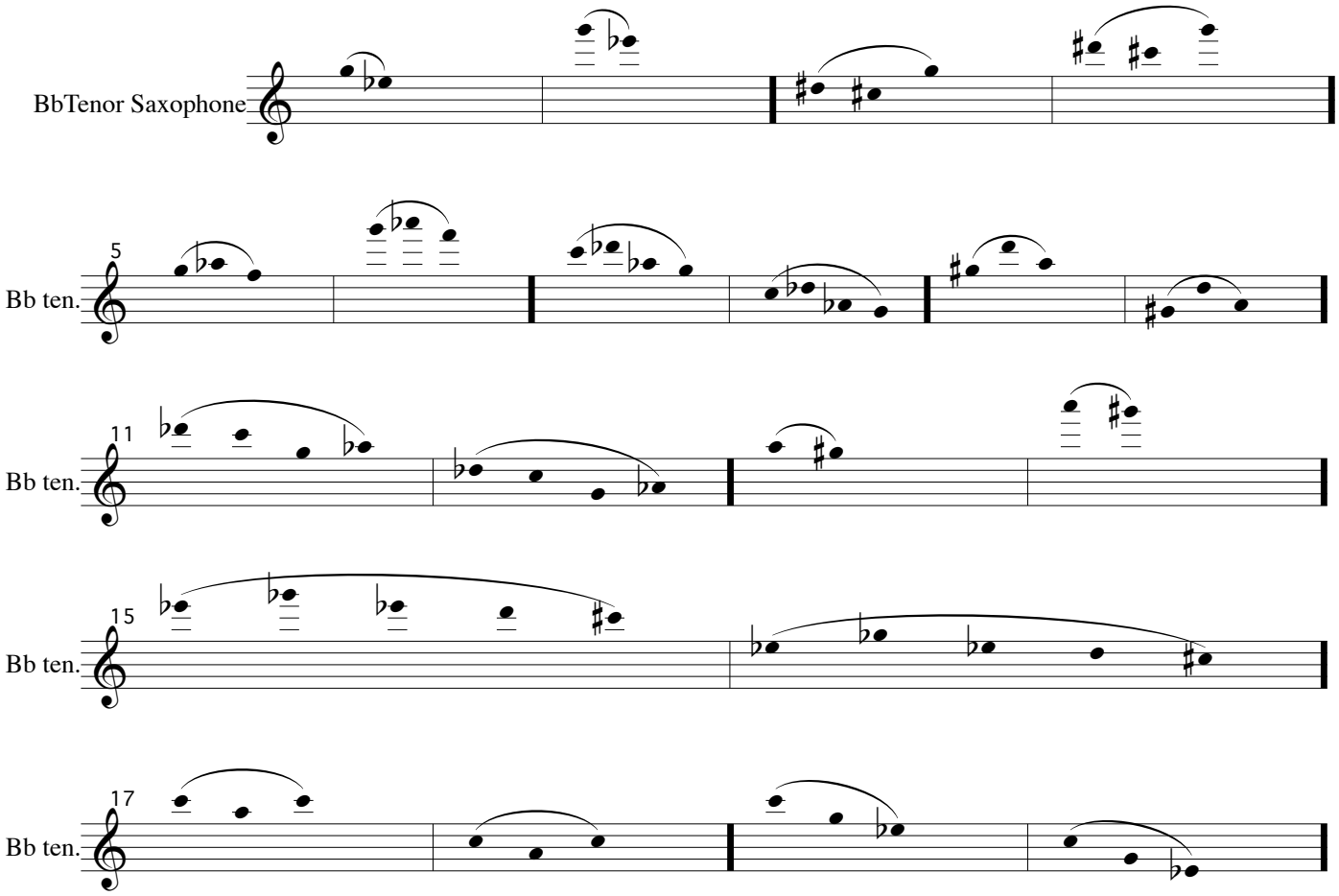
The computer can recognize certain melodic fragments which cause the output of a high register saxophone "cry" that mirrors the melodic profile of the identified fragment.

The performer is free to combine and repeat any fragment from the collection below at any speed or with any rhythmic profile to create phrases or tremelo patterns of any length.

SPECIAL EFFECT: If the peformer triggers the CALL and RESPONSE function for a significant period of time without employing any of the other functionalities in CORAIL, then CALL and RESPONSE will become self-generating for a period of time. This effect will create a swarm of the saxophone cries.
Once started the effect can be stopped by playing legato tri-tones (at least 4)each tri-tone must be completed in a legato fashon but indivual tri-tones can be seperated with silences and any interval leap. the tri-tone count must increment at least once every 2 seconds or the count will begin from zero.

If the performer calls the RECORD/PLAY function of Corail while the automated Call and Response is engaged, then the computer will not only record the incoming saxophone but will also record all the incoming automated saxophone cries.

CALL and RESPONSE LIBRARY OF MELODIC FRAGMENTS



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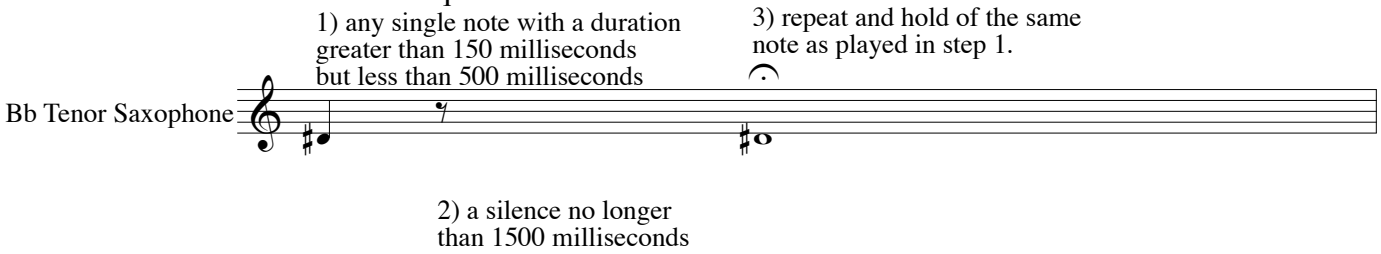
Functionality2: DRONE/PLAY "raga"

Repeated notes combined with silence detection control the DRONE/PLAY function in CORAIL.

The DRONE/PLAY command requires three events



When DRONE and PLAY is triggered, the identified repeated note will be taken up by the computer and applied to a periodic rhythmic grid where it is played back as the central pitch in an accompanimental rhythmic drone.

The tempo of the drone is determined by the saxophonis with the distance between the onset time of step1 and the onset time of step 3 being the new beat tempo for the computer drone.

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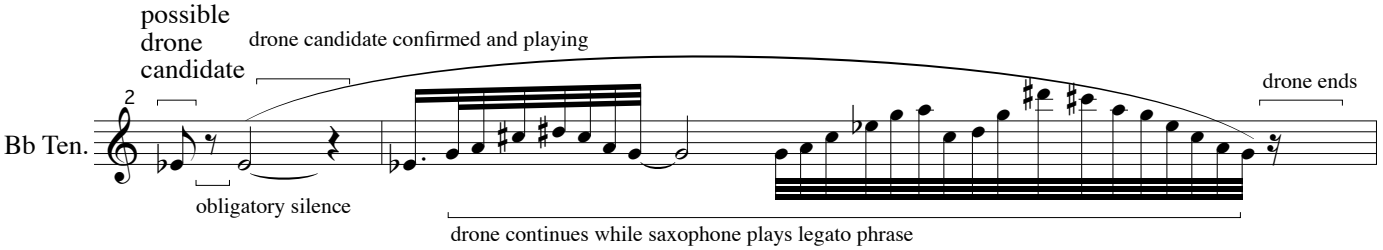
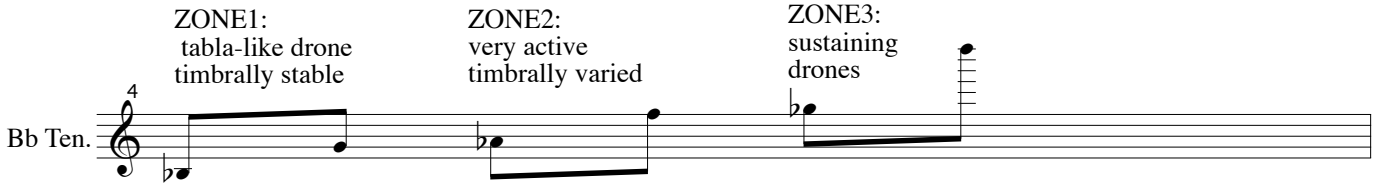
The drone will stay in effect until the next silence detection. In this way, the performer is free to create a musical phrase while the drone is playing underneath or above.

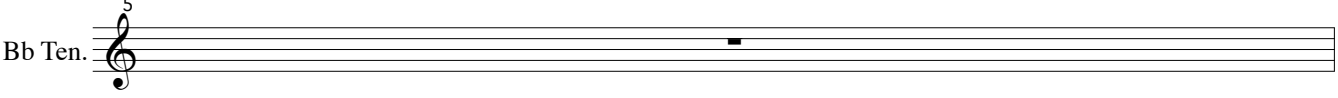
EXAMPLE 1: DRONE/PLAY (this example is a model and should be memorized)



The type of drone that the computer will produce depends on the register of the identified drone pitch. There are three drone "zones".



IMPORTANT: record/playback functions are cancelled when droning. However, all the pitches in the legato phrase of a droning cycle will be collected in a midi sequencer and played back at any time during the legato phrase by playing a minor third in the phrase. The best place for the minor third is at the end of the phrase but anyplace will work as long as at least 5 pitches of a phrase have taken place. repeated minor thirds will just retrigger the start of the current sequence and the pitch of the end of the minor third will be the starting transposition level of the playback sequence -- each start will come with a new timbre. When silence is detected, the drone dies out, the sequence associated with that drone is erased.
a new sequence recording will take place with a new drone.



playback extinguishing whole steps (whole tone scales etc.. explained in record/play) still function in drone mode. A drone prhase might consist of a whole tone scale which would serve to stop all playback functions but still drone.

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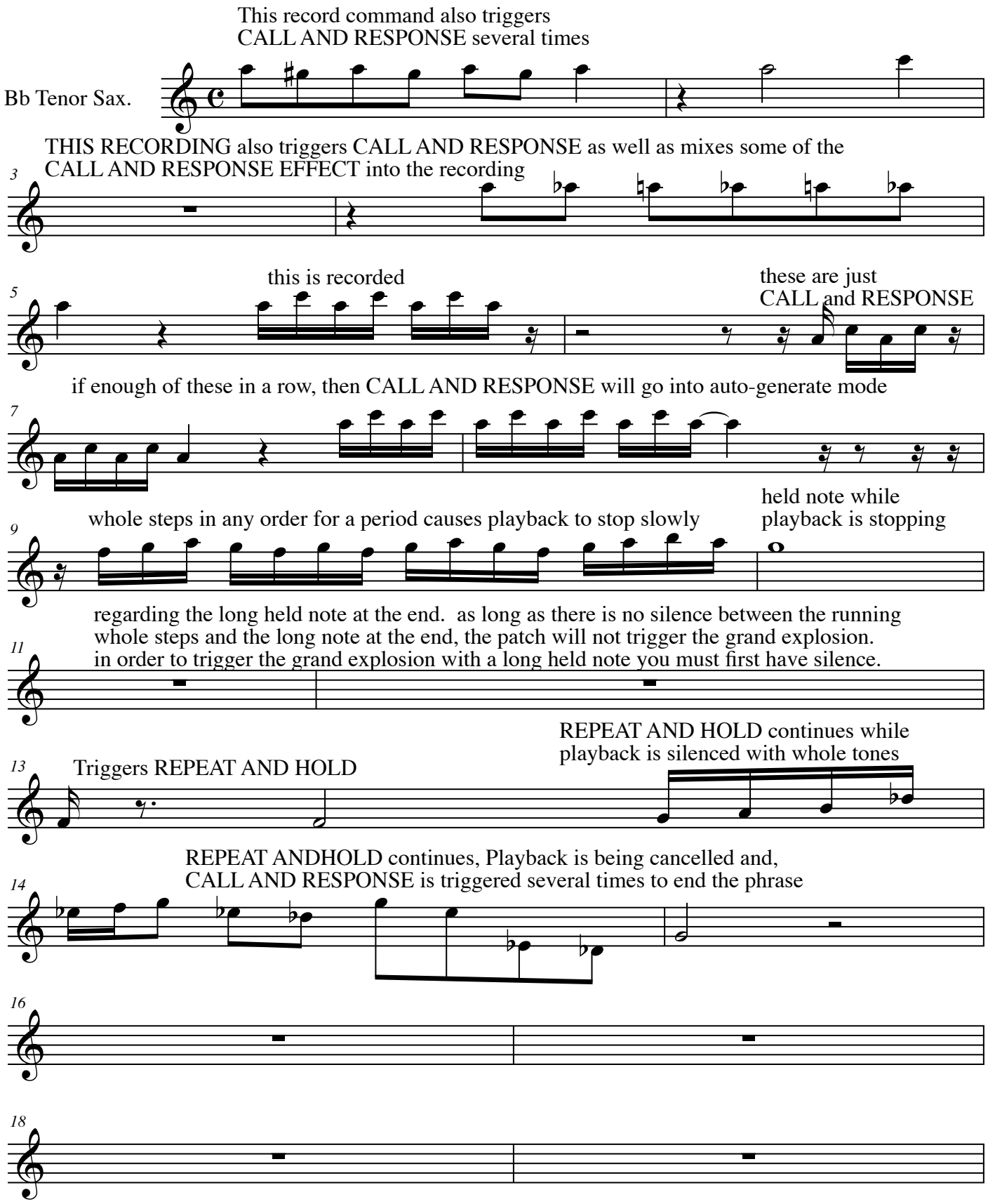
CORAIL HELP. COMBINING EFFECTS



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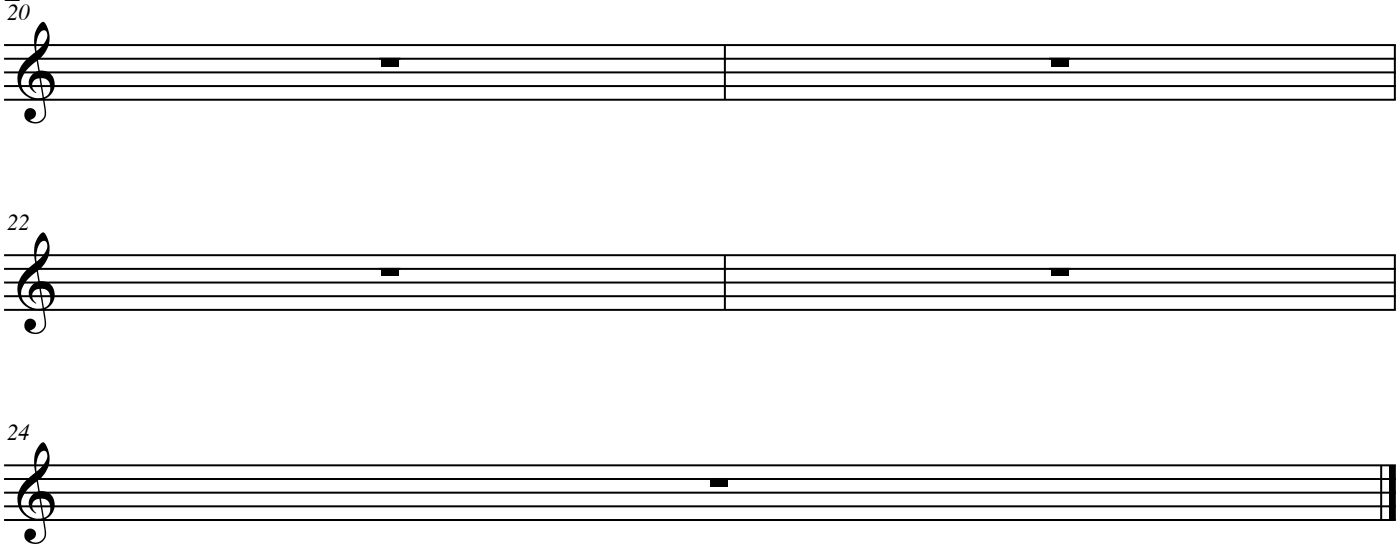
Corail_practice _phrases



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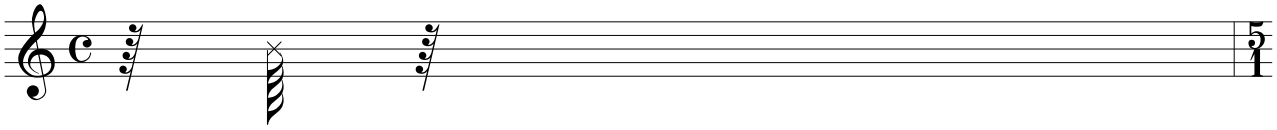
Functionality4: SHORT EVENT TO NOISE

Any sound made by the saxophonist including key clicks or pitched material that is less than 100 milliseconds in length will cause the program to output a sampled "noise" element.

Bb ten.



any event under 100 milleseconds causes output

SPECIAL EFFECT: If the peformer triggers the SHORT EVENT TO NOISE function for a period of time without employing any of the other functionalities in CORAIL, then SHORT EVENT TO NOISE will become self-generating for a period of time. This effect will create a mass of noise.

Once started the effect can be stopped by playing legato tri-tones (at least 4)each tri-tone must be completed in a legato fashon but indivual tri-tones can be seperated with silences and any interval leap. the tri-tone count must increment at least once every 2 seconds or the count will begin from zero.

If the performer calls the RECORD/PLAY function of Corail while the automated SHORT EVENT TO NOISE is engaged, then the computer will not only record the incoming saxophone but will also record all the incoming automated noises.

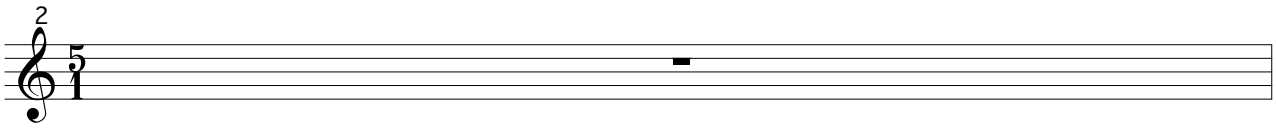
Functionality5: THE GRAND EXPLOSION

Any single held note that exceeds the longest-note setting found in the VALUES window will cause the program to enter into an hyper-active state where all functionality of the patch is automated and self-generating (lasts about a minute). Once THE GRAND EXPLOSION is lauchned it cannot be rescended accept by the computer operator with the PANIC button. The output of THE GRAND EXPLOSIONwill follow the dynamic level of the live instrumentalist.

IMPORTANT POINTS:

1) during the Grand Explosion, record and play functions will be temporarily disabled.
2) during the first ten seconds of the Grand Explosion the patch will automatically record the saxophone and stock buffers that will be used at the end of the effect. The saxophonist should play long held notesduringthe first ten seconds of the Grand Explosion.
3)Once the explosion dies down, a residue will remain that was created by the 10 second recording period at the beginning of the effect.

Bb ten.



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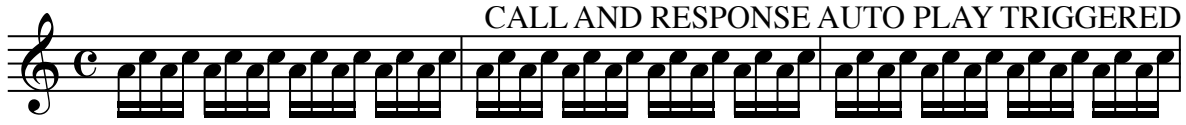
CORAIL 2010
STOPPING AUTO_PLAY(S)

WHEN CALL AND RESPONSE OR SHORT NOTE TO NOISE IS FORCED INTO AUTOPLAY MODE THE AUTOPLAY CAN BE STOPPED WITH A SERIES OF TRI-TONE INTERVALS

engage CALL AND RESPONSE or short note to noise autoplay with a large number of calls

Tenor Sax.



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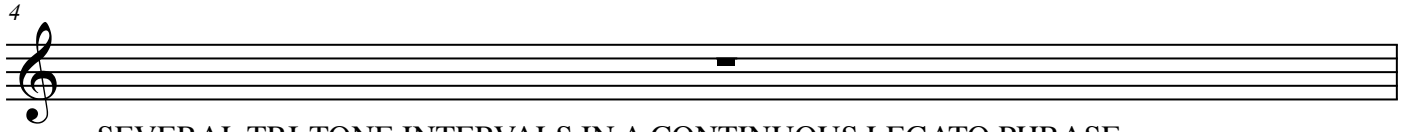

SEVERAL TRI-TONE INTERVALS IN A CONTINUOUS LEGATO PHRASE WILL STOP THE AUTOPLAY

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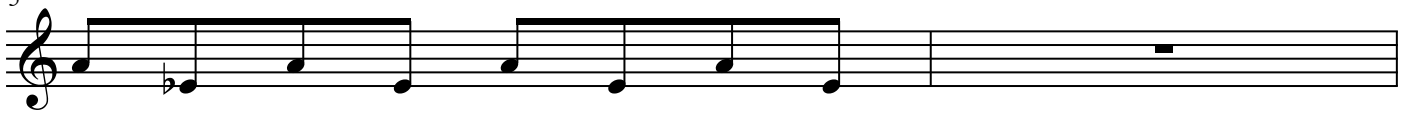

INTERVALS BETWEEN TRI-TONES ARE IGNOREDAND THE EFFECTS ARE CANCELLED

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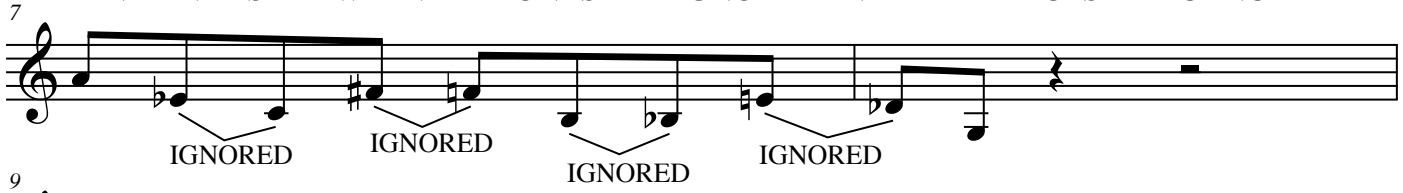

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SILENCES CAN BE INTRODUCED BEWEEN TRI-TONES BUT A NEW TRI-TONE MUST ARRIVE AT LEAST EVERY 1.5 SECONDS

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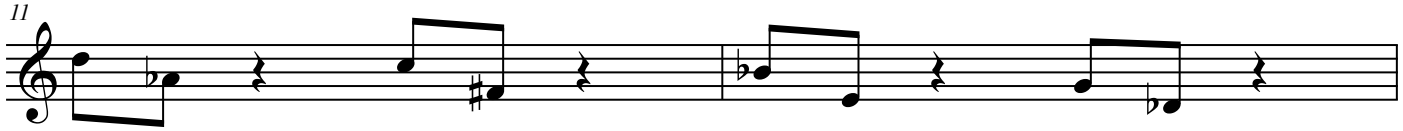

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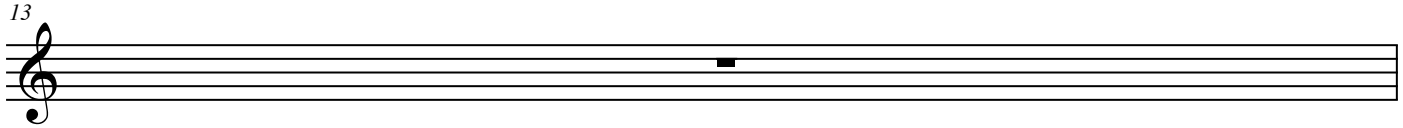

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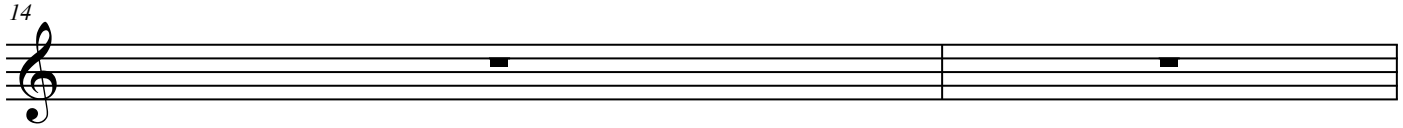

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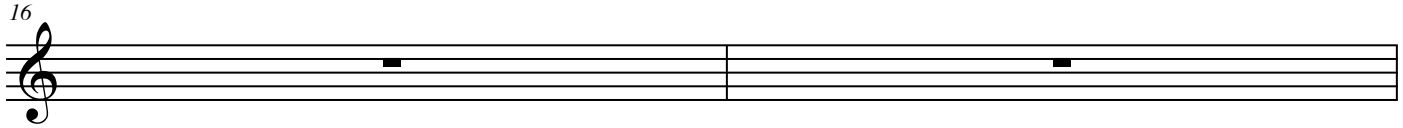

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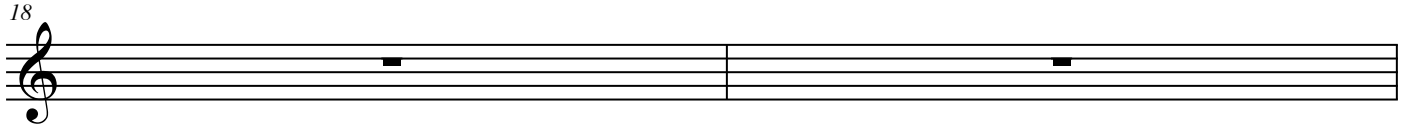

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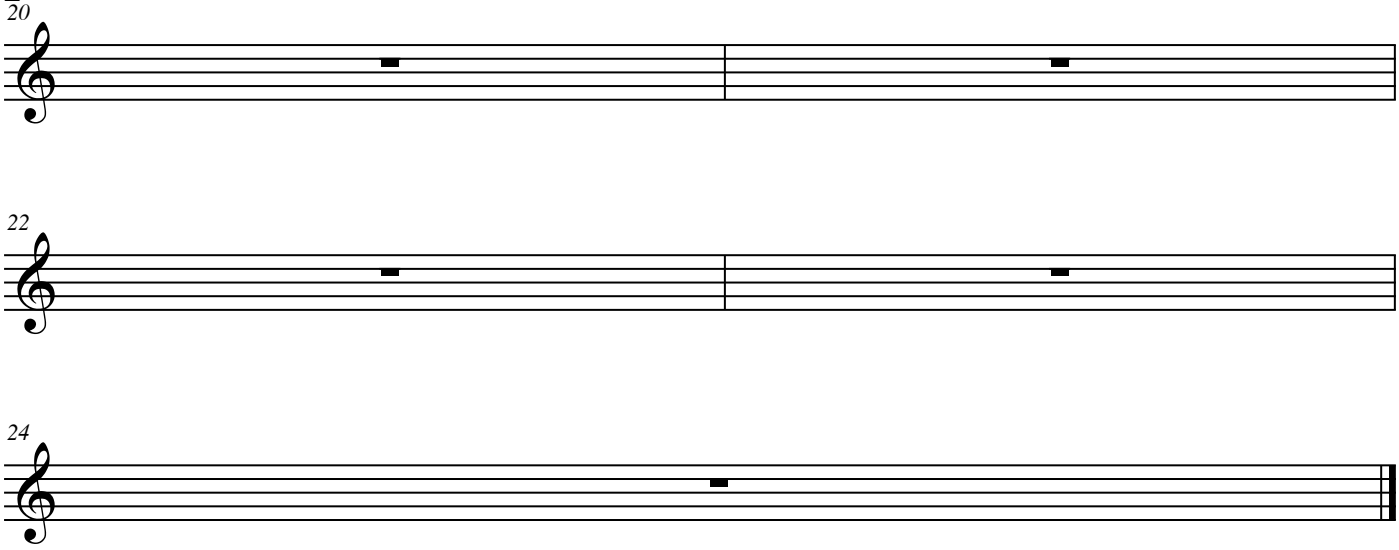
Corail_practice _phrases