

*Music of the Whole World*

- presentation # 4: April 5, 2006

# **Persian influenced Intercultural Music**

study materials  
for composers and musicians

by Moshe Denburg

with bibliography and discography  
compiled by Farshid Samandari

## *Persian influenced Intercultural Music* - study materials

### General Note

The following study materials are being made available to participants in the educational series, **Music of the Whole World**, presented by the Vancouver Inter-Cultural Orchestra (VICO) at the Vancouver Public Library. The presentation, **Persian influenced Intercultural Music**, took place on April 5, 2006.

### Acknowledgements

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### Orchestration of Persian Instruments

These materials form part of a larger work in progress (as of February 2006) entitled ***Orchestrating the World - a Manual of Intercultural Music Making*** by Moshe Denburg. Portions of this work are available for downloading on the VICO website. To download this study guide, as well as an expanded one for musicians and composers which includes orchestration materials for selected Persian instruments, go to:

**[www.vi-co.org](http://www.vi-co.org)**  
and click on 'VICO Instruments'.

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### The Persian Musical Tradition – Scope and Considerations

The Persian musical tradition belongs, broadly speaking, to a group of traditions we may generally call the ‘modal’ or ‘melodic’ music systems. In this group of systems we may include: Arabic, Turkish, and Indian. To be sure, there are others, but it is these above-mentioned which have strong historical and developmental connections with Persian music.

In modal systems generally there is no emphasis on the edifice of harmony as we know it in the West. The reasons for eschewing harmony as a structural element in music making may be based on established principles of the physics of music. To be brief, in order to create harmonic structures, the musical intervals utilized must vary from the theoretically “perfect” intervals, i.e. – those intervals which are consistent with the harmonic or overtone series. Thus, a bit paradoxically, Western harmony relies upon **non-harmonic** intervals in order to be useful! Modal musics often place a premium on these “perfect” intervals, and on other discrete pitches whose appreciation would be compromised in an harmonic setting.

Another element of modal music that makes it unique is the utilization of specific ‘in-between’ notes, such as the quarter tones of Arabic music, and the microtones of Persian music. One way (not the only way) of understanding the scale utilized in Persian music is to conceive of it as comprising 17 gradations to the octave, rather than the 12 of Western music. This is illustrated below in the chart pertaining to the tuning of the Tar.

It is not that we subscribe to the adage of “East is East and West is West and never the ‘twain shall meet’”. However, when trying to understand a modal system we do well to look at what is valued within that system. Persian music places an emphasis on monophony (single musical line), melody, and the fluidity of musical lines. In modal musics generally, the notes themselves, and the unique melodies and ornaments they give rise to, are valued above all else, and harmony can be an impediment to the appreciation of the melodic forms. Whether this must always be the case, or whether an intercultural context of music making can honour the esthetics of both east and west, is the question artists today, the world over, are actively exploring.

The system of modal exposition in Persian music is known as the **dastgah** system. There are 12 dastgahs – more precisely 7 main dastgah, plus five **avaz** (related dastgah) - each representing a group of melodic forms passed down by tradition. The dastgah is a collection of modes and melodies, and each dastgah may contain several different modes. The term that is used to signify an individual mode is **gushe**, which is somewhat analogous to the term **maqam** utilized in Turkish and Arabic music. In fact, the term **maqam** was, and still is, common in the Persian system as well, but in modern practice **gushe** serves to better signify the modes of Persian music as distinct from those of the Turko-Arabic world.

Persian music belongs to the systems of aural musical transmission, and as is common to these systems, it involves a strong element of structured improvisation. Even so, music notation existed for centuries in Persia, in a system comparable to the early European alphabetic system for notes. Over the centuries it was abandoned and revived several times, until, around 150 years ago, modern western staff notation was adopted, together with the special musical signs and symbols signifying specific microtones and ornaments.

Persian music, which goes back 3000 years, has been very influential in the musics of the Middle East and of North India. There are sources that relate that in ancient times the Greeks borrowed the seven tone system from Persia. Its use of compound meters such as 5, 7, 9 and 11 is typical of its repertoire. Odd time signatures such as 2/3 and 4/3 can also be found. The musical instruments of Persia have their counterparts in, and have influenced the development of the instruments of the above-mentioned musical traditions.

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### Descriptions of selected Persian Instruments

**Barbat** – A short necked fretless lute, known famously throughout the Arabic world as the Ud, it typically has 5 double courses of strings tuned in intervals of a perfect fourth. It has a full, warm sound and its fretless neck allows for quarter tones and sliding effects. The European Lute derives directly from the Ud; in fact, the word Lute is derived from El Ud (the Ud).

**Daf** - The daf is a frame drum, traditionally covered with goat skin. In the hands of a professional it is capable of all kinds of intricate rhythms and a variety of timbres by utilizing finger work, closed and open sounds, slaps, and pitch inflections. It may have metal rings attached to the inside of the rim, which create a jingling sound as the skin is struck.

**Dohol** –The dohol is a hollow cylindrical drum made of wood and covered on both sides with skin. It is played with sticks and projects a very strong sound. It is often paired with the *sorna*, a double reed instrument, and these are utilized much in ceremonial music, often on joyous occasions.

**Dotar** - The dotar is a pear shaped long necked lute whose name literally means “two strings”. The body and neck of the instrument are made of several kinds of wood – mulberry, walnut, and others. Its two strings are made today of steel, though in former times they were fashioned of silk. It is tuned in intervals of a perfect fourth or fifth, and its neck has frets, placed to render a chromatic scale. It is a plucked instrument, and utilizes the fingers rather than a plectrum.

**Kamanche** - (pronunciation: *ka-man'-che*) The Kamanche is a 4 stringed bowed lute common in Persian Music and in other middle eastern and Arabic traditions. It can be found all over the near and middle east, and in countries such as Azerbaijan, and Russia. It has a resonance box made of hardwood on one end, which is covered with a very thin skin. Its wooden bridge is curved to allow for the bowing of separate strings. It is sometimes called a ‘spike fiddle’ due to its having a spike protruding from the bottom end, permitting the player to play it in an upright position, somewhat like a cello. Its strings are made of steel, and are tuned in various ways, including the western violin tuning of G, D, A, E.

**Ney** - Also known as *Nay* (pronounced: na'-i), it is an end blown cane flute without mouthpiece or reed. A very significant instrument throughout the Arabic, Turkish, and Persian worlds, this instrument generally has 6 upper holes and one on the underside for the thumb. It is capable of a range of 2 to 3 octaves and has been used for performing all forms of music: art, folk, and religious. The Persian ney is distinct from its Turkish and Arabic counterparts in that it possesses a small brass cylinder at its upper end, which the performer anchors between his upper incisors, producing a unique timbre.

**Santur** - The santur is the Persian hammered dulcimer (more precisely called a *struck zither*) whose trapezoid body is made of a hard wood such as walnut or rosewood. It has 72 strings, which are strung over two sets of 9 bridges on either side of the instrument. The instrument is strung 4 strings to a note, and the gamut rendered has a diatonic range of just over 3 octaves. It is played with 2 wooden mallets.

**Setar** The most immediate relative of the tar (see below) is the setar. It is the older version of the tar, a smaller instrument, very portable, but not possessing the tar's projective qualities. It has one double string and two singles - 4 strings in all, which are commonly tuned to the tonic and dominant notes of the mode, e.g. - double string #3:  $c/c^1$ ; string #2:  $g$ ; string #1:  $c^1$ . The setar is plucked with the fingers rather than with a plectrum.

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**Sorna** – a double-reeded wind instrument, the sorna has many relations all over Asia, from the Zurna and Mizmar of the of the Arabic and Turkish traditions, to the Shenai of North India and the Suona of China. Shawms, and latterly oboes, of the western world are part of this family as well. The sorna is tubular in construction and has 8 finger holes, giving it a range of just over an octave.

**Tar** - Belonging to the lute family, the tar appeared in its present form in the middle of the eighteenth century. The body is a double-bowl shape carved from mulberry wood, with a thin membrane of stretched lamb-skin covering the top. The long fingerboard has twenty-six to twenty-eight adjustable gut frets, and there are three double courses of strings. Its range is about two and one- half octaves, and is played with a small brass plectrum. A smaller version of the tar is the *setar*. This is the older more traditional instrument. It can play most everything the tar can play but without the tar's projective capacities. The tar is a more modern development.

**Tonbak** - (also written tombak, donbak, dombak; and also known as **Zarb**) is a goblet shaped drum made of wood and covered with lamb or goat skin. It is the chief percussion instrument of Persian art music. The technique of play utilizes much finger articulation, and snapping sounds, which are typical of the sound of the instrument. The syllables of its name imitate the two prominent sounds of the drum: *tom* – a deeper sound produced in the middle of the drum head, and *bak* – a higher sound produced by striking nearer the rim. It is related to other goblet drums of the Middle Eastern world, especially the Darabuka (also known as **Dumbek**) of the Arabic musical tradition.

**Ud** – (also written *Oud*) see **Barbat** above.

### **Orchestration Materials for Tar, Kamanche, and Ud**

What follows are fuller descriptions of the Tar, the Kamanche, and the Ud. The Ud, known as Barbat in Persian music, is an instrument highly valued in the Arab world especially. It is included here because of its ubiquitousness all over the Mid and Near East.

The Tar's scale is illustrative of the 17 tone scale system of Persian music. Though this is not the only way of conceiving the notes and modes of Persian music, it will give the reader some insight into their inner workings.

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• Tar



[ Picture of Tar ]

**Description**

Belonging to the lute family, the tar appeared in its present form in the middle of the eighteenth century. The body is a double-bowl shape carved from mulberry wood, with a thin membrane of stretched lamb-skin covering the top. The long fingerboard has twenty-six to twenty-eight adjustable frets made of cat gut, and there are three double courses of strings. Its range is about two and one-half octaves, and is played with a small brass plectrum. A smaller version of the tar is the *setar*. This is the older more traditional instrument. It can play most everything the tar can play but without the tar's projective capacities. The tar is a more modern development.

**Tuning and Scales**

Tuning

The three courses of strings on the Tar are basically tuned c - g - c<sup>1</sup>. (Piano notation: C28 - G35 - C40). There are several scordaturas possible, which are discussed below.

The highest course, double string # 1, has 2 steel wire strings; the middle course is comprised of 2 copper strings; and the lowest is comprised of a lower copper string plus a higher steel string. Thus, double string # 3 will sound the octave c-c<sup>1</sup>.

	<u>Course</u>	<u>Tuned</u>
[highest]	Double String # 1 -	c <sup>1</sup> c <sup>1</sup>
	Double String # 2	g g
	Double String # 3	c <sup>1</sup> c
[lowest]		

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### Scale

In the Persian-Turkish-Arabic traditions of modal music, there are notes which do not conform to the 12 tone gamut of western music. A rough theoretical idea of the gamut employed in these systems is what is called the 24 tone equal temperament, in other words, the system which divides the octave into 24 quarter tones of equal ratio. If the 12 tone equal temperament octave of western musical practice consists of 12 semitones, each separated by an interval of 100 cents (1200 cents to the octave), the 24 tone equal temperament octave would consist of 24 quarter tones each separated by an interval of 50 cents.

This theoretical idea is only a rough snapshot, and in practice the actual notes played do not conform to the theoretical ideal.

The Tar utilizes a gamut of 17 tones to the octave, where (taking the note C as tonic) the positions:

**C - D - E - F - G - A - B**

are tuned approximately as in the western system, and the positions:

**C#/Db - D#/Eb - F#/Gb - G#/Ab - A#/Bb**

each have 2 variants, at least one of which approaches a quarter tone alteration.

These altered notes are signified by one of 2 symbols:

**p** is known as "koron" - and means lowered by a microtone;

**>** is known as "sori" - and means raised by a microtone.

To illustrate, here is one theoretical construct for the tuning of the Tar (put forward by the theoretician Professor Hormoz Farhat).

<u>interval</u>	<u>cents</u>	<u>note name</u>	<u>approximate interval ratio</u>	<u>description</u>
0	0.000	C	1/1	unison, perfect prime
1	90.000	Db	256/243	Pythagorean limma
2	135.000	Dp	27/25	large limma
3	205.000	D	9/8	major whole tone
4	295.000	Eb	32/27	Pythagorean minor third
5	340.000	Ep	243/200	acute minor third
6	410.000	E	81/64	Pythagorean major third
7	500.000	F	4/3	perfect fourth
8	565.000	F>	25/18	classic augmented fourth
9	630.000	Gp	36/25	classic diminished fifth
10	700.000	G	3/2	perfect fifth
11	790.000	Ab	128/81	Pythagorean minor sixth
12	835.000	Ap	81/50	acute minor sixth
13	905.000	A	27/16	Pythagorean major sixth
14	995.000	Bb	16/9	Pythagorean minor seventh
15	1040.000	Bp	729/400	acute minor seventh
16	1110.000	B	243/128	Pythagorean major seventh
17	1200.000	C	2/1	octave

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Another representation of the 17 tone gamut is as follows:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>C</b>	C <sup>#</sup> D <sub>b</sub>	D <sup>↑</sup> <sub>b</sub> C <sup>↑</sup> <sub>#</sub>	<b>D</b>	D <sup>#</sup> E <sub>b</sub>	E <sup>↑</sup> D <sup>↑</sup> <sub>#</sub>	<b>E</b>	<b>F</b>	F <sup>↑</sup> <sub>#</sub> G <sub>b</sub> <sup>↓</sup>	F <sup>↑</sup> <sub>#</sub> G <sup>↑</sup> <sub>b</sub>	<b>G</b>	G <sup>#</sup> A <sub>b</sub>	G <sup>↑</sup> <sub>#</sub> A <sup>↑</sup> <sub>b</sub>	<b>A</b>	A <sup>#</sup> B <sub>b</sub>	A <sup>↑</sup> <sub>#</sub> B <sup>↑</sup> <sub>b</sub>	<b>B</b>	

Note that the 8th and 9th positions, which correspond to the raised 4th and lowered 5th of the gamut, do not have a variant which approximates the western scale. The raised 4th, F<sup>></sup> (F sori) is less than a semitone, and the lowered 5th, G<sub>p</sub> (G koron) is similarly not quite a semitone. Other than these two, the entire gamut of western music can be approximated, not in equal temperament of course, but nonetheless in tune with the western trained ear.

### Frets

In order to obtain the 17 tone scale on the fretboard of the tar, the gut frets are placed at the appropriate positions. These frets can move to a small degree, but since the tar's neck is graduated in thickness from the nut to the sound box (thinner at the nut, thicker at the box), only incremental movements, of perhaps a couple of millimetres, can be made; these however are sufficient to adjust the tuning of the scale.

Since the circumference of the neck graduates as one proceeds from the nut to the sound box, moving the frets towards the nut would loosen them to the point of being unusable, and in moving them towards the box they will refuse to budge due to over-tightening. Thus one cannot really change their positions within a composition. Alternate scales or notes can be called for, but these would entail untying and retying the frets to the neck of the tar, not at all an easy or quick task. Nor is it certain that the performer would be amenable to the task.

The correct placement of the frets, in order to render the 17 tone scale, is done by ear.

### Scordaturas and Keys

#### Scordaturas

Several scordaturas are possible, the most common being those that alter the tuning of the 3rd and 2nd double strings. For example:

Basic tuning	Scordatura 1	Scordatura 2	Scordatura 3
c - g - c <sup>1</sup>	d - g - c <sup>1</sup>	c - f - c <sup>1</sup>	c - g - d <sup>1</sup>

Other scordaturas are possible as well, though there is a limit to how much the strings can be tensioned, or loosened. Consult with the performer. It is possible to raise or lower strings during performance, though some time would be required to do this. A workaround is to have a second or third instrument available.

Certain modes require retuning a string to one of the microtones of the scale. For example, in the mode **segah**, the tonic is the 3rd lowered by a quarter tone (e<sup>↑</sup><sub>b</sub>), so the tuning becomes: e<sup>↑</sup><sub>b</sub> - g - c<sup>1</sup>.

Double string # 3 is quite flexible and one can raise it up to a 4th higher, to **f**. The 2nd string can go as high as **a<sub>b</sub>** or **a**. The 1st string may be raised a major second, to **d<sup>1</sup>**, but checking with the performer and his instrument is always a good idea.

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### Keys and Modes

Not all keys are good for the tar. Generally a key which utilizes one of the open strings as a tonic or a dominant works well. Some keys that will work are: C, G, F, D. Ease of the key also depends upon the mode being played, some modes are more easily rendered in one key or another.

For example, **mahur**, the mode which corresponds to the major scale of western music, sits well in C, F, and G. Bb may also be a good key for **mahur**.

The context of the music itself will determine the best keys; certainly some notes outside the mode can be added, or certain modal modulations can be made, but care needs to be taken in choosing the actual keys so that the main notes called for are playable, and the instrument's resonant properties (open strings) are utilized.

Most of the tar's music is traditionally learned in *chapkuk* (the female singing key) and *raskuk* (the male singing key). Note: *Chap* means 'left', *ras* means 'right', and *kuk* means 'tuning'. The keys chosen depend upon the mode called for. In the case of the above mentioned **mahur**, men would sing it in C and women in F.

The modes of Persian music which utilise microtones are not easily transposed from one tonic center to another. Thus the choice of tuning is central. The actual pitches available on the various strings change with a change in tuning, the fret placements being unchanged. Here are several charts with the notes obtained on the various strings:

#### c string:

C - C#/Db - C $\sharp$ /D $\flat$  - **D** - D#/Eb - C $\sharp$ /D $\flat$  - E - F - F $\sharp$ /G $\flat$  - F $\sharp$ /G $\flat$  - G - G#/Ab - G $\sharp$ /A $\flat$  - A - A#/Bb - A $\sharp$ /B $\flat$  - **B**

#### g string:

G - G#/Ab - G $\sharp$ /A $\flat$  - A - A#/Bb - A $\sharp$ /B $\flat$  - **B** - C - C#/Db - C $\sharp$ /D $\flat$  - **D** - D#/Eb - D $\sharp$ /E $\flat$  - E - E#/F - E $\sharp$ /F $\flat$  - **F#**

#### f string:

F - F#/Gb - F $\sharp$ /G $\flat$  - G - G#/Ab - G $\sharp$ /A $\flat$  - A - **Bb** - B $\flat$ /C $\flat$  - B $\flat$ /C $\flat$  - C - C#/Db - C $\sharp$ /D $\flat$  - **D** - D#/Eb - D $\sharp$ /E $\flat$  - **E**

#### d string:

**D** - D#/Eb - D $\sharp$ /E $\flat$  - E - E#/F - E $\sharp$ /F $\flat$  - **F#** - G - G $\sharp$ /A $\flat$  - G $\sharp$ /A $\flat$  - A - A#/Bb - A $\sharp$ /B $\flat$  - **B** - B#/C - B $\sharp$ /C $\flat$  - **C#**

### Notation

The tar is notated at concert pitch. The western five line staff is utilized together with the treble clef exclusively, and leger lines below the staff are common. For extended passages in the lowest octave one can notate an octave higher and mark the passage 8vb.

Scordatura needs to be indicated at the beginning of the work. Scordatura is not treated as a transposition tuning unless the entire tuning is altered by the same amount. This kind of transposition sometimes occurs, for instance when the tonic Bb is desired; in this case the entire tar is tuned down a whole step, and the notation would be written a whole step higher than concert pitch. One would indicate the scordatura: Bb - f - b<sub>b</sub>, followed by: written C = sounded Bb.

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In practice, key signatures for modes with microtonally altered notes utilize the koron (**p** - meaning less than a semitone flat) almost exclusively. Thus, the symbol  $\flat$  is more common than  $\sharp$ .

By creating key signatures which show which notes are flat, sharp, koron, and sori, the tar player will know exactly what is required.

Since the Persian tradition utilizes many compound rhythms (5's, 7's, 9's, 11's, etc), the rhythmic structure is often written at the beginning as well, for example, for a compound rhythm of 11/16, one may write above the first measure 4+3+4. And so on.

### Range

The tar has a range of 2 and 1/2 octaves, from **c** to **g<sup>2</sup>** (C28 to G59). The approximate range for each double string is:

Double string #3 - 1 octave

Double strings #2 - 1 octave plus a major 2nd

Double string #1 - 1 octave and a perfect fifth.

In one hand position on the tar, the range on any string is an octave or a 9th, depending upon the tuning chosen.

### General Considerations

The Tar is a Persian lute with a range of around 2 1/2 octaves, from **c** (below middle C on the piano) to **g<sup>2</sup>**. The 3 strings are in double courses, usually tuned to the same pitches. In some dastgahs (collections of modes) the bass strings may be tuned to different pitches. We are usually dealing with 4th or 5th intervals between strings when playing the tar.

The timbre of the tar is akin to that of the western banjo, thus if one wants sustained notes the tremolo must be called for. The sound projects quite well, and is capable of cutting through other ensemble sounds. Ornamentation is quite idiomatic for the instrument. Intonation can be a problem in ensemble, because the tuning system is unique to Persian music; even when playing with middle eastern instruments intonation is a hurdle, since the quarter tones of Arabic music, for example, differ from the microtones of Persian music. The problem can be overcome in various ways, by choosing those notes which are common, by having other non-fretted instruments adjust to the tar's tuning, and by slightly moving the tar's frets to compensate for small discrepancies.

The cat gut frets are wound around the neck in several wraps. Some have three winds and others have 4 winds, as position markings. The traditional plectrum is made of polished brass in a bee's wax holder. Other materials can be used as plectra, though timbrally these do not make a great difference.

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### Dynamics

The tar can project itself very well, and also can be quite subdued. *pp* to *ff* is an acceptable dynamic range for the instrument.

Some techniques of subduing the sound include the following:

- a) playing with the finger action only, without the plectrum;
- b) playing on a single string rather than the double;
- c) placing one's palm on the bridge, which mutes the sound somewhat;
- d) finger picking and plucking is a quieter technique and can be utilised.

To create forte and fortissimo the tar player will strike all 6 strings while playing the melody. This gives greater presence to the instrument and increases the sound output tremendously.

### Speed of Execution

The speed of execution is quite fast, especially for diatonic progressions. Note that in traditional Persian music there are not many leaps. String crossings are common, tempered only by the tuning chosen - a perfect fifth between double strings #2 and 1 will make it a bit more difficult to move between these strings in a scalar manner. A fast speed for a scalar run is 16th notes at 132mm for the quarter note.

### Techniques

#### *I. Traditional Techniques*

Note: Symbols used may vary from publication to publication, thus what is most important is the technique involved, and the clear indication to the performer. Most of these techniques can be written out in full, or explained as an expression marking; western notational devices may be utilized, with explanations. Appending the Farsi technical names may be helpful as well.

1. Eshareh beh payeen - lower grace note (lower mordent); pluck a note and hammer off and on.
2. Trill - on one pluck; hammering on and off.
3. Dorab - quick grace notes, on one note, a quick picking down-up, then down on the main note. The main note can be the same note as the grace notes. Usually utilizes two grace notes, but could call for more.
4. Riz - a tremolo
5. Takriz - hit all strings heavily and go into a riz (tremolo) without stopping; a kind of arpeggio catapult into a tremolo
6. Dorab az dastbaz - a dorab where a grace note on an open string. leaps to a main note on the same string at any intervallic distance. *Dastbaz* means open string.
7. Hammering off and on with the fingers, without plucking. This gives a subdued effect.
8. Kandan seem - upper mordent; pluck a note and hammer on and off.
9. Chap rooye seem panjom - an upstroke on the 5th string (the higher of double string #3), left open; it is a rhythmic utterance, done to an extent ad libitum; after plucking some melody on another string the 5th string is given an upstroke to add colour or a kind of pedal point.
10. Rhythmic pattern playing – this is quite idiomatic. It utilizes an open string as a pedal point (or as a kind of drone), sounding it at regular intervals while playing a melody on a different string. The rhythmic contour is retained and given great pulse, together with the melody.

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### **II. Vibrato, Tremolo, Glissando etc.**

Vibrato - 1. A fingered note can be bent back and forth to create a vibrato. 2. A special vibrato technique is accomplished by pushing on the string at the waste end of the bridge. This tensions and loosens the string one is playing, rendering a convincing vibrato. It is useful for giving a vibrato on an open string.

String Bends - are possible on the tar; they are convincing everywhere on the instrument but assume the more so in lower positions, and where the string tension is lower. Maximum bend is a semitone.

Glissandi are of course performable, as on any fretted lute (e.g. the guitar).

Tremolo is highly idiomatic and effective.

### **III. Harmonics**

Not a typical technique but these are possible, at the usual nodes, certainly at the octave and at the 5th.

### **IV. Muted Notes**

The subdued effect of placing the palm of the right hand (the plucking hand) on the bridge is very useful. Full muting does not work very well however, the placement of the hand on the string makes plucking difficult.

### **V. Accents and Timbres**

All accents can be called for.

Timbral variation is very marked on the tar, and very idiomatic. Several parameters can be utilized.

- a) Playing close to the bridge vs. playing sul tasto.
- b) Due to the different materials from which the double strings are made, different colours can be derived. The same passage can be repeated on a different string rendering a timbrally contrasting effect.
- c) The differing tensions on the various double strings also help give contrasting timbres.
- d) Double string # 3 is actually two strings an octave apart, playing a melody here will have a timbre all its own.

### **VI. Other Special Techniques**

Playing on two strings of the same double string. For example double string # 1 is fingered and the higher string is fingered higher, rendering an interval. Certain chordal effects can be achieved in this way.

### **Related Instruments**

1. The most immediate relative of the tar is the Persian **Setar**. For a description see above in 'Descriptions of selected Persian Instruments'.
2. There are other forms of the tar which are found in Azerbaijan, Uzbekistan, and Turkey.

### **Asian/Middle Eastern Relatives of the Tar**

There are many lutes in Asia with frets, many of which are utilized in rendering the modal musics of the Near and Middle East. Here are some notables.

- Bouzouki (Greece)
- Saz (Turkey)
- Pipa (China)

## *Persian influenced Intercultural Music* - study materials

### • Kamanche



[ Picture of Kamanche ]

### Description

The Kamanche is a 4 stringed bowed instrument common in Iran (Persian Music) and in other middle Eastern and Arabic traditions. It can be found all over the near and middle east, and in countries such as Azerbaijan, and Russia. It has a resonance box made of hardwood, such as walnut, on one end, which is covered with a very thin young goat's skin. Other membranes include sheepskin and fish skin. Its wooden bridge is curved to allow for the bowing of separate strings, and it is placed in a slanted manner upon the membrane. Some resonance boxes are made of a whole piece, and some, in Iran, are made of several strips bound together. The resonance box may be closed or open at the back. The Kurds, for instance, use an open back, which gives it a very loud and more nasal quality. The neck, also made of a very hard wood, is attached to the resonance box, and has pegs at the top end to tune the strings. At the bottom end there is a spike, which is used to hold the instrument upright as it is played, somewhat in the manner of a Cello. Nowadays, some Kamanches are made of softer woods, such as spruce.

### Tuning

The most common tuning is a series of fifths, like the western violin, but one tone lower:

$$f - c^1 - g^1 - d^2.$$

It will be written one tone higher, thus D (written) = C (concert).

### Scordaturas

There are several common scordaturas, all of which can be tuned without restringing:

1.  $f - c^1 - f^1 - c^2$
2.  $g - d^1 - g^1 - d^2$
3.  $f - c^1 - g^1 - c^2$

These scordaturas are especially useful when playing in modes or in keys which have a strong tonic reference. For example, for a piece written primarily in G, a good tuning could be:  $g - d^1 - g^1 - d^2$ . Similarly, a piece in F would be rendered well in the scordatura:  $f - c^1 - f^1 - c^2$ .

In cases of scordatura, the written part may be transposed or not - one should check with the performer and abide by his preference.

Keys with many flats or sharps are unusual for the Kamanche player, though they are not impossible. Asking for improvisation in a key with many accidentals will not work well - the idioms of improvisation demand simpler keys, preferably with tonics and/or dominants on the open strings.

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### Range

The professional's range extends up to one octave above the highest string (string # 1). Thus, if the tuning is  $f - c^1 - g^1 - d^2$  the range is 2 octaves and a major 6th ( $f$  to  $d^3$ ). For those who are of an intermediate level, the range may be taken to extend up to a 5th above the open 1st string.

### Notation

The western notational system is normally used. Some specific persian ornaments have special markings, but these too, once understood, can be notated with western devices. The composer who wishes to call for traditional ornaments needs to inquire of the Kamanche player what these are specifically. For 1/4 tone accidentals the following symbols may be utilized:

‡ 1/4 tone sharp

‡ 1/4 tone flat

### General Considerations

Kamanche performance belongs to the traditions of modal music in the world, more specifically the Persian-Arabic tradition. The modes of these traditions incorporate quarter tones and/or microtones, however, these modes are not chromatic and the western composer needs to look into the modal traditions themselves in order to grasp the larger modal concepts. There are many styles of Kamanche playing, including those from Iran (Persia), Azerbaijan, Russia, and the Arabic world. The style of Kamanche playing in the Arabic world is close to that of the Persian tradition.

The ideal of clean notes, though executable, is not so important in traditional Kamanche playing. The Kamanche can of course play discrete tones, as in the west, and so the modes and scales of the western world are playable on it. However, it is very idiomatic for the bow to touch open strings while playing fingered notes. This is especially so when the adjacent open string is a tonic or a dominant of the mode being played.

### Dynamics

The Kamanche has very good expressive qualities. The dynamic range is good from the point of view of feeling, and there is dynamic control from a very soft to a quite piercing sound. However, its volume output is generally softer than the western violin. In this regard it is more delicate dynamically.

### Speed of Execution

a) Slurred phrases (many notes to the bow), in a stepwise progression, can be played extremely quickly. Assume top speed for a stepwise movement, in a not overly long phrase, in 32nd notes at quarter note = 100;

b) Detache (one note per bow) can be executed comfortably up to (approximately) 16th notes at quarter note = 100mm.

c) Tremolos on one note can be executed very quickly; assume 32nd notes at quarter note = 100

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### **Techniques**

#### ***I. Bowing and Fingering***

Down bow ( ▣ ) is considered to be to the right (like the western Cello). Upbow ( ▽ ) to the left.

The kamanche can execute legato (slurred or one note to a bow), detache, and some basic light staccato. The 1st and 4th strings can be bowed jete, since one can easily avoid striking the other strings.

Fingered chords are possible but very unusual. It is best considered a special technique and planned for in consultation with the performer. However, bowing a fingered note together with an open string is very do-able, and even idiomatic.

#### ***II. Vibrati, Glissandi***

The normal vibrato used in Persian Kamanche playing is a slide vibrato. This is different than the shaking finger of western violin playing. On Kamanche the vibrato is executed by a small back and forth sliding movement on the string. This kind of vibrato is very idiomatic.

Glissando is very performable, though sliding between notes is not a traditional technique. However, the kamanche is well adapted to all the combinations of vibrati and glissandi that are executable on other fretless bowed stringed instruments.

#### ***III. Harmonics***

The Kamanche is not capable of good production of harmonics. Its fundamental tones however are very rich in overtone content.

#### ***IV. Pizzicati***

Pizzicati are very performable; scales are fine. The sound is very clipped and 'banjo-like'. It has very good projection. One can be bowing a melody and pluck an open string with a left hand finger while pausing on a bowed note. This technique is very common.

#### ***V. Accents and Bowing***

Accenting generally takes the form of a note of shorter duration together with a bit more inflection than what would be derived by bowing legato. Strong staccato or staccatissimo does not work. Very hard bowing will compromise intonation. On the 1st string however a bit more staccato can work. The 1st string is louder and has a clearer tone than the others - it has good projective qualities.

#### ***VI. Special Techniques***

Traditional ornaments include a quick upper mordent, sometimes executed on many notes in succession. It is called 'kandakari' (ch sp). There are other ornaments utilized to colour the notes. (ch) In listening to Kamanche playing and in consultation with the player himself the composer may learn about these in greater depth.

### **Asian/Middle Eastern Relatives of the Kamanche**

Rebab (found in many countries)

Erhu (China)

## *Persian influenced Intercultural Music* - study materials

- Ud (also spelled **Oud**)



### Description

The Ud (Arabic Lute) is the central symbol of Arabic traditional and classical music. It appeared in Central Asia and the Middle East more than 2000 years ago. Its rounded body gives a full, warm sound and its fretless neck allows for quarter tones and sliding effects. It can have a biting staccato attack. The European Lute derives directly from it; in fact, the word Lute is derived from El Ud (the Ud).

### Tuning

The basic Ud has four courses of double strings tuned as follows (concert pitches):

(high) string # 1	- c	(piano notation: C28)
string # 2	- G	(G23)
string # 3	- D	(D18)
string # 4	- AA	(A13)

They will be written an octave higher than their sounding pitches.

### Scordaturas and Extensions

There are several kinds of Uds with different numbers of strings. Other than the 4 basic courses which can be taken as a rule of thumb, stringings and tunings vary, and the composer needs to inquire of the performer as to the tuning and range of his specific instrument.

- The 4 string type we take as the basic or 'classical' Ud.
- The contemporary 5 string Ud is very common. The fifth string is added below the lowest AA, and is normally tuned to GG (G11); sometimes it is tuned a 4th below the 4th string to EE (E8). Often this fifth string is a single string. Here is the tuning (the basic Ud is in bold):

(high) <b>string # 1</b>	- <b>c</b>	<b>(C28)</b>
<b>string # 2</b>	- <b>G</b>	<b>(G23)</b>
<b>string # 3</b>	- <b>D</b>	<b>(D18)</b>
<b>string # 4</b>	- <b>AA</b>	<b>(A13)</b>
string # 5	- GG	(G11) or EE (E8)

- There is a 6 string Ud which is tuned in 5 courses of 2 plus one single in the bass end, thus:

(high) <b>string # 1</b>	- <b>c</b>	<b>(C28)</b>
<b>string # 2</b>	- <b>G</b>	<b>(G23)</b>
<b>string # 3</b>	- <b>D</b>	<b>(D18)</b>
<b>string # 4</b>	- <b>AA</b>	<b>(A13)</b>
string # 5	- FF	(F9)
string # 6	- CC	(C4)

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- There are Uds of 6, 7, and 8, strings which take as their basis the contemporary 5 string Ud, and add strings above the 1st string c (C28). Here is the full 8 string Ud and the tunings of its strings:

(high) string # 1	- e <sub>b</sub> <sup>1</sup>	(Eb43)
string # 2	- b <sub>b</sub>	(Bb38)
string # 3	- f	(F33)
<b>string # 4</b>	- <b>c</b>	<b>(C28)</b>
<b>string # 5</b>	- <b>G</b>	<b>(G23)</b>
<b>string # 6</b>	- <b>D</b>	<b>(D18)</b>
<b>string # 7</b>	- <b>AA</b>	<b>(A13)</b>
string # 8	- GG	(G11)

### Range

The safe upper limit on any string is an octave. This would render a c<sup>1</sup> (C40) on the basic Ud's 1<sup>st</sup> string.

### General Considerations

The Ud is short necked and higher up it is more difficult to play, more difficult to intone, and more difficult to create lasting sounds. The length of decay of the notes of the ud is excellent on the open strings but not as good on fingered notes.

It is hard, and such is the case with many plucked strings, to fix its fundamental pitch, thus we have assumed that string # 1 on the basic Ud sounds c (C28), an octave below middle C on the piano keyboard, and have chosen to notate it one octave above, in the bass clef. In its higher reaches of its range we will utilize the treble clef.

In certain manuals this same string # 1 may be taken to sound c<sup>1</sup> (C40), which is middle C itself. If we notate this one octave above, we will obtain written pitches that can be adequately notated with the use of the treble clef alone. It can be assumed that reading musicians can deal with both the treble and bass clefs, but it may help to provide a clarifying note in the score or part. Whenever possible, the composer will do well to ask the performer which system he would prefer.

### Dynamics

The ud can be typified dynamically as a delicate chamber music instrument, of baritone range, and of low to medium dynamic output. In Arabic orchestras there are usually several uds in order to give presence to its voice. It is usual, in an intercultural music making context, to provide sound reinforcement for the ud. Of course it all depends upon the actual musical requirements of the composition being performed.

### Speed of Execution

In the hands of a professional the ud can move very quickly in scalar runs, perhaps as fast as 16th notes at 160mm to the quarter note. Higher up on any given string intonation becomes more difficult and thus speed of execution here may also be affected. Also, for jumps which require string crossings the composer has to consider that speed of execution may be slower. There is much idiomatic use of open strings together with fingered notes, and these sorts of 'pedal' figures may increase the ease of execution in fast passages. Tremolos on one note can of course be executed with very great speed.

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### **Techniques**

#### ***I. Technique of Play***

The ud is played with a plectrum. The left hand fingers the notes and the right hand plucks the strings. The fingerboard is fretless and chordal work is rarely called for.

#### ***II. Vibrato, Tremolo, Glissando etc.***

Pitch vibrato is very executable, and tremolos are highly idiomatic. Tremolos are often utilized to extend the sound of a note, in fact the Udist will generally play longer notes in this manner unless specifically instructed not to do so. Both hard and soft tremolos are possible. Glissando is possible everywhere. Tremolando (= tremolo + glissando) is very easy.

#### ***III. Harmonics***

Harmonics are possible on the ud, as on all fixed length strings. Check their effectiveness with the performer.

#### ***IV. Muted Notes***

As on other plucked string instruments the ud strings can be plucked while partially muting them with the right hand. (editor's note: check how much they are utilized and the specific limitations).

#### ***V. Accents and Timbres***

Both staccato and legato playing are possible, and the timbre may be varied by playing closer (harsher timbre) and further away (softer timbre) from the bridge.

#### ***VI. Special Techniques***

- Certain techniques of utilizing fingers in combination with plecra are possible, but these are unusual and should not be called for without consulting the performer.
- Chordal work is not usually called for - due to the fretless nature of the instrument these will be very hard to intone. However, with open strings, certain chordal work can be executed. There are also certain 'grace note' possibilities which utilize combinations of notes as a springboard to a main melody note.

#### ***VII. Thoughts on Intonation and Arabic Modes***

The actual modes of Arabic music utilize notes which are not found in the equal tempered western system. Generally they can be called quarter-tone notes. These notes are built into many of the modes of Arabic music, and the ud, being a chief exponent of the Arabic modal system, and also being a fretless instrument, can play these modes with great fidelity. In order to utilize these modes the composer must consider carefully the harmonic and melodic implications, as well as the training of the performer.

From a western point of view the ud can be utilized in harmonic music, but certain keys and modes are better suited to the ud than others. Those that utilize open strings are much to be preferred, namely: G major; G minor; C major; C minor; A minor; D major; D minor.

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### **Notation**

Arabic music uses a *Do Re Mi* (Do = C; Re = D; etc.) system and the five line staff. There are 24 quarter tones to the octave, and the quarter tones are built into many instruments, such as accordions and organs. The 24 quarter tone system is a theoretical one, in practice the different modal systems in the Near and Middle East call for different sizes of microtones; so the quarter tone system is not completely prescriptive but only a general snapshot of the Arabic-Turkish-Persian modal systems.

### **Related Instruments**

The ud is prevalent in all Arabic-Turkish-Persian music. Though uds may vary in size and number of strings in different geographical regions, the short-necked fretless lute is unique. However, it has many fretted relatives all over Asia. (see below)

#### Asian/Middle Eastern - fretted lutes

There are many fretted lutes in Asia. Though not directly related to the ud, like it they are utilized in rendering the modal musics of the Near and Middle East. Here are some notables.

- Bouzouki (Greece)
- Saz (Turkey)
- Tar (Iran)
- Pipa (China)

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compiled by Farshid Samandari

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## Study Leads

### Institutions

University of Southern California

### Musicians

Hossein Behrouzinia (North Vancouver)

Farshid Samandari (Vancouver)

Amir Koushkani (North Vancouver)

### Internet Resources

Mahoor Institute of Culture and Art

- on the internet: <http://www.mahoor.ir/>

Persian MusicAcademy

<http://www.persianmusicacademy.com/>

The Art of Persian Music

<http://www.santur.com/>

Arash Dejkam's Iran Pages – Iranian Music

[http://www.dejkam.com/music/iran\\_traditional/](http://www.dejkam.com/music/iran_traditional/)

## **For more information on intercultural events, music, and study**

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