

Circumstances which I had not foreseen have produced the interesting coincidence that I who had the pleasure of appearing as a commentator on one of the first programs of the present cycle am now privileged with having the last musical word before the concluding summary. It seemed to me appropriate to choose for the occasion one of my latest orchestral works available on records. And I hope it will be found equally fitting if I attach to my analysis a few remarks concerning the latest trends and developments in contemporary ^{music} since in the present survey of important works of the first half of our century we are now ready to cast a glance at the potentialities that the near future is holding for the art of composition.

The work which I should like to present in this broadcast has the title Eleven Transparencies. It was written in 1954 for the Louisville, Kentucky, ~~Orchestra~~ → Orchestra, and you will hear it performed by that orchestra under the direction of Robert Whitney. It consists of eleven short pieces for medium-sized orchestra.

To be sure I had written short pieces before, as nearly every composer has done at one time or another. My interest in expressing myself again in this manner was aroused incidentally ~~at~~ when the editor of the New Mexico Quarterly who was about to publish in the spring issue of 1953 my autobiographical Self-Analysis asked me to contribute a specimen of my musical handwriting not to exceed two pages of his magazine, and ~~to make my offerings available to the majority of persons interested readers.~~ I decided to write a piano piece for this purpose. ~~Like piano music, usually being written on two staves, and since as much space than, say, flute or violin music, the piece had to be very short indeed. To squeeze as much substance as possible into the limited space, I made the piece extremely dense. It might be mentioned in passing that this brief composition was heard for the first time over the Canadian radio network when I played it in Toronto in the summer of 1955.~~

The problems involved encountered in writing ~~it~~ (have not ceased to interest me ever since. A year later or so I began to experiment further with the material touched upon in that first piece, and the result was a set of Twenty ~~studies~~

This will include a brief demonstration of the newly discovered medium of electronic music.

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Small form:

Decker. Bayadelle

Schubert 1st theme, self-sufficient, could go on from this,

Wrahm. Interim - thinking of 19

expressionism: fragmentary; self-suff. because of rhetorical power. not fragmentary.

because not reflecting larger form

In the Strauss. Goals of formal consistency, rhetorical impact, and textual construction.

Thinking: away from form, from rhetoric and language. construction by including time. Importance.

activities for piano. The New Mexico piece appears now as the concluding element of the cycle. ~~My continued interest in the short musical form is manifested in the eleven Franz Liszt pieces that are going to be in a few minutes.~~

The conspicuous fact that the three founders of the new atonal style, Schoenberg, Webern, and Berg, at the beginning of their exploration of the new territory wrote various groups of short pieces suggested the view that the new idiom, deprived as it was of the features of stability and the means of articulation supplied by the previous musical language of tonality, did not lend itself readily to the establishment of larger musical structures, and that it took the invention of the twelve-tone technique to make these structures possible. ~~There is undoubtedly much to be said for this argument, but basically the problems are the same whether one attempts to write a short piece or a long one.~~ In fact, the argument could just as well be reversed, since the solid harmonic relationships of tonality and its well established system of cadences render it easy enough to create a feeling of finality at any point one may choose and thus make even a very brief musical process self-sustained, while the unstable, floating configurations of atonality have usually the character of what was called "open-end" structures inviting continuation rather than conclusion.

It seems ~~more~~ likely that those composers wrote short pieces because this was what they wanted to do. ~~then because they were unable to create larger contents.~~ The motivation for brevity is to be found in the will to concentration, — understandable enough as a reaction against the expansive, overflowing, abundant, and colossal style of the immediately preceding period of late romanticism. In this respect atonality indeed favors brevity. In the ^{tonal idiom} the musical elements — tones or chords — were ~~con-~~ \rightarrow conceived as interdependent parts of a given system of relationships, and the perception of context rested upon making this interdependence explicit, which took considerable time and space. In the atonal style it is possible to impart to very small groups of elements — perhaps only two or three tones properly spaced and articulated — an expressive significance which in tonality could be duplicated only by unfolding a fairly elaborate harmonic process. I have tried to demonstrate these conditions in my discussion of Webern's Symphony at an earlier occasion in this cycle.

In the light of recent developments it may indeed be said that the introduction of the twelve-tone technique in the beginning brought about a conservative trend toward a restoration of the traditional forms in the atonal idiom. ~~It was not seen ^{as} this light because its strong speculative elements startled early observers.~~ But it is obvious that Schoenberg and many composers for nearly thirty years saw in this technique chiefly a welcome means for stringing together the isolated musical molecules into broader contexts. The twelve-tone series was well suited to the purpose of establishing continuity in a medium which otherwise seemed to offer very few possibilities to do so. Schoenberg was so steeped in the concepts of a great tradition that he would ^{not} give up the ambition to create large musical forms which would emulate the admirable models of the classical style, and his influence was strong enough to keep many younger composers interested in projects of a similar type. I was one of them. Only Webern resisted this temptation by sticking to utmost brevity and concentration even in those ^{few} compositions of his in which he followed traditional structural patterns. However this has only recently become evident, when a complete reevaluation of the meaning of serial techniques began to take shape, about which more a little later.

In my thinking about these issues I came already about twenty years ago to the conclusion that employing the twelve-tone technique for the creation of larger forms was a transitory state of affairs and that we would arrive at a point at which the technical advantages of this method would become a sort of second nature so that we could get along without adhering to strict serial procedures. Consequently several larger works of mine dating from that period are not any longer based on consistent application of dodecaphonic processes. The logical outcome of this train of thought would of course be that the twelve-tone technique has very limited practical value as a tool of composition and is important mainly as a discipline toward acquiring writing skill in the atonal idiom.

Today I interpret my renewed interest in the short forms as a token of my not being satisfied with so easy a dismissal of the serial idea. It occurred to me that the twelve-tone series was not only a means for creating continuity, but that

The characteristic constellations of intervals and tones which were the result of the serial ordering in themselves represented structural elements whose mutual relationships could well become the source of musical experience without being strained to produce thematic material, as it was called in the era of the classical forms. (4)

I shall elaborate on this idea after we have heard the Eleven Transparencies which I should like to present as a sort of a borderline case on the road from the older type of serial thinking to the newer one. As to the title of the work, I quote from the note which I have supplied for the recording as follows:

"The title Eleven Transparencies suggests that something is shining through the music. What it is, should be anybody's guess, as it was my own. What I felt was shining through after I had written the music is indicated by small parenthetical subtitles. But they are not meant to prejudice the listener's imagination — rather to inspire moods in the performer, if he cares to be so inspired. If he does not, and prefers to derive his own ideas from the music itself, it is just as well. Thus no more need be said about it." End of quote.

According to what I said before the pieces vary in that ⁱⁿ some of them an attempt was made to recreate traditional musical structures, such as the three-part ABA form or a rondo form with two or three alternating ideas, on a miniature scale, while in some other pieces I tried to bring out characteristic textural features, such as were offered by the tone-row I had chosen, without endeavoring to elaborate on these elements in the manner of thematic development familiar in the classical style. This idea seems to me most clearly expressed in the first and the last numbers of the cycle. It might be interesting that both were written after the intervening nine pieces were completed. Before we proceed to listen to the whole cycle, I should like you to hear the opening piece. The parenthetical subtitle reads "Design from darkness".

[Play first piece]

What stands out in this piece in the dimension of melody, is the interval of a minor third, with which the Double Basses open the proceedings. In the harmonic dimension it is two chords which are heard right after the first two tones of the Double Basses. When I had set up the complete table of the twelve transpositions of each the original, the in-

(5)

verted, the retrograde, and the inverted retrograde forms of my basic twelve-tone series, it turned out that these two chords would appear as constellations of subsequent tones of the series at various places of the whole system of forty-eight serial patterns so that it became possible to present them several times, but each time in a different context as they were preceded and followed each time by a different order of tones. Since this was the motivating idea of the design, it did not seem of interest to continue the process once the possibilities offered by the serial setup were exhausted, which justifies the brevity of the piece from a technical as well as an aesthetic viewpoint.

x As an example of a different approach I should now like to present piece number five, subtitled "Rays of warmth". If it should seem to be more reminiscent of traditional musical concepts than the first piece, this is not so much due to its adherence to a traditional structural pattern than to the fact that in it a more familiar type of continuity is stressed. The piece can hardly be analyzed in terms of a three- or more part rondo form. It consists of a number of phrases which are developed from the opening motive of the trumpet, this motive each time being given a different and consecutively more elaborate continuation. As far as I can see it, the absence of a clearly recognizable architectural form is compensated for by the continuity of broad melodic lines which have the expressive character usually associated with romantic music making. Let us now hear this piece number five.

play # 5

After this short preview we shall now hear the Eleven Transparencies as a whole. The subtitles are as follows: Design from Darkness. — Flashes — Waves — Images and Spooks — Rays of Warmth — Sparks cascading — Light and Shade — Knives and Dashes — Volcanos of Anguish — Upon hearing the call from far away — The rest is silence. As I said before, these titles are afterthoughts of the composer and are offered here as a marginal autobiographical

simply rather than as a guide to the possible meaning ⁽⁶⁾
of the music. Here now is the work in its entirety.

play the whole work

"The rest is silence" - a twelve-tone chord in its most elementary shape concludes the work: all twelve tones juxtaposed within the confines of an octave and sounded together. This sound obliterates the qualities of the individual pitches. It appears to be hardly more than an extension of the peal of the big Chinese gong gently vibrating underneath.

The Transparencies had brought me to a crossroads. Adherence to the older ways of continuity would mean giving up, or at least relegating serial thinking to a minor function, ~~and a new one~~ ~~afforded~~ ~~it~~. Making the serial concept the principal law-giving force, would mean fragmentation of the musical style, somewhat in the manner of Webern, a way of writing which was aptly called "point-music". However, there was more involved than just a matter of choosing between two possible manners of writing music.

A younger generation of composers who were further removed from the romantic tradition and therefore less bothered by the problem of dealing with it than their predecessors, had already adopted the "point" style as their natural medium of expression. This position includes two new assumptions: first, a technical one - that is, a generalization of the serial concept so that it would cover not only the succession of pitches and intervals, which the twelve-tone technique had accomplished, but an increasing number of factors of which the musical process is made up; second an aesthetic assumption - that is, getting away from the rhetorical aspects of music which had dominated it for centuries and relying more and more on elements of design and construction.

To start with this second idea, we have to realize that the tradition of occidental music, as we know it, is essentially based upon speech-like articulation. This is revealed in the very way in which we are fain to verbalize musical processes. We speak of musical phrases being related to each other like question and answer, of the expressive eloquence of certain musical features, we evaluate breaks in the context as analogous to punctuation signs in speech, and in various such ways we assimilate music to the

nature of speech. This applies even to those instrumental forms which according to their derivation from dance exhibit a rhythmic structure of a rigidity basically alien to the ~~the~~ emotionally directed, spontaneous inflection of speech. It is easy to see that the whole movement of modernism which characterizes the hundred years from roughly speaking 1850 to 1950 was dedicated to make music even more speech-like in a naturalistic sense. ~~The craving for ever more direct, intense expressiveness has dictated all innovations of vocabulary and style from Wagner through the expressionistic utterances of the early 20th century. The resistance which met these general post up against these innovations was due to their being conditioned to the classical type of expressiveness which was domesticated and tamed by its allegiance to the dance like structures prevailing in the instrumental music of the 17th and 18th centuries.~~

¶ The dialectical nature of human thinking according to which any concept contains elements which are the opposite of its ostensible intent has produced the puerile fact that the ultimate liberation of musical speech from all traditional ties was accompanied by the ascendancy of the far more rigidly confining idea of serialism. The earliest expression of this idea was, as we know, the twelve-tone technique in which the composer adheres to a pre-established succession of the twelve tones of our musical system. The essential motivation for doing so is the composer's dominant desire to gain ever more control over his material. One might ask why he needs pre-established patterns of any kind for this purpose. For apparently he has full control over the material anyway, especially after he has freed himself of the bondage of tradition, so that nothing seems to prevent him any longer from writing music any which way he pleases. However, this does not satisfy him because it seems to open the door to a sort of musical no-man's land in which any kind of standards are replaced by meaningless subjectivism. Is he perhaps afraid of the freedoms he has conquered? Let us leave this question to the interpreters of the philosophy of history, and let us accept it as a fact that the contemporary composer

wishes to manifest his control over the material by subjecting ⁽⁸⁾ it to a rational plan which will channel and possibly even override his momentary impulses due to what is commonly but vaguely called inspiration.

The younger composers of whom I spoke, instead of abandoning the twelve-tone technique, decided to give the principle behind it still more power. A tone is obviously characterized by more variables than by being preceded and followed by certain other tones, this being the aspect which the twelve-tone technique had singled out for special attention. A tone, or chord for that matter, also varies in terms of loudness, timbre, type of articulation and so on, but above all in terms of duration. If the twelve-tone series regulates the succession of pitches, it seems to be interesting to test the possibilities of a serial statement regulating sequences of durations. ~~It would be useless to go into the ramifications of this subject unless I could demonstrate it in great detail.~~

An elementary consideration will suffice to show how far reaching the consequences of this idea are:

As long as only the succession of pitches is pre-established, I am enjoying a great deal of leeway in formulating so-called spontaneous inspiration, since I can ^{always} avoid the necessity of using tones not agreeing with my idea by escaping in the dimension of time, i.e. postponing unwelcome entrances, anticipating others, and such. As soon as the dimension of time too is brought under pre-established control, full determination applies not only to what will happen (that is, what pitches will be sounded), but also when it will happen. Or, geometrically speaking, in the twelve-tone technique only one of two coordinates is strictly measured - the magnitudes of the other remain undetermined. In the new, generalized serial technique both coordinates are measured, and the music takes on the characteristics of a totally predictable curve. About the factor of predictability I'll have to say a few more words a little later.

The interest in electronic sound production was undoubtedly stimulated by the recent preoccupation with the time element. Electronic sound production in itself has been well known and exploited for many years in the various types of what is usually called "electric organs". Only the new developments in tape recording techniques have made it possible to produce music which

may be called genuine electronic music since it is brought to the listener directly from the composer without interpreters other than the operators of the sound-producing and recording apparatus who carry out the composer's technical instructions if he does not do so himself. Already twenty years ago I have pointed out that it ought to be possible by means of suitable contrivances to inscribe sound-producing curves onto soundtracks without the music's ever having been played. ~~At that time the idea came up in a discussion of the sometimes distressing inadequacies of live performances of new music. It seems to me that this idea was later actually carried out under the auspices of the Canadian Film Board in some experimental moving pictures.~~ However, only the recording tape furnishes that degree of precision which the complexities of a music with pre-established time-patterns necessitates, and it is easy to see why.

For purposes of electronic music production we use tapes that move at a speed of 30 inches per second, that is 76 centimeter. In other words, a tone, or chord, lasting one second will consume $2\frac{1}{2}$ feet, or 76 cm of tape. It is of course no problem to cut from such tapes pieces of one centimeter's length and to paste them together in any desired order. We thus obtain a chain of musical elements, tones or chords, each of which lasts one seventysixth of a second. In other words we are able to represent even such time relationships as lie beyond the level of perceptibility. with utmost accuracy. Naturally composers whose ideas require the realization of time relationships of such complexity feel themselves attracted to the electronic medium.

Another, and a more obvious attraction of this medium is the possibility to create sound qualities which \rightarrow may not be obtained in any other way. The sounds which are employed in electronic music are derived from generating devices known as oscillators and the like. The basic ~~and the simplest~~ instrument among these devices is a frequency generator producing pure tones, i. e. tones without harmonics or partials. Any other sound known to our ears includes various groups of harmonics depending on the nature and composition of the material which is made to vibrate in order to make the sound. In the tones coming out of the oscillator the amount of material that might vibrate is reduced to a negligible minimum. These tones are also known as sine waves

30
60
120
240
480
960
1920
3840
7680
15460

since if their vibrations are made visible on an oscillograph they (10) show the simple, regular sine curve familiar from geometry, while the complex timbres of traditional instruments cause complicated and irregular curves to appear on the tiny screen of the oscillograph.

It is possible to analyze the sound, let us say, of a trumpet and to find out its acoustical components just as one subjects light emanating from some source to spectral analysis. We will then see exactly how many and which sine waves are contained in the trumpet sound, in what proportions of loudness and preponderance, and so forth. Consequently it is possible to reverse the process and to reconstruct the trumpet sound by synthesizing the components discovered in the analysis. This was the main ambition of the builders of electric organs, but of course it will not interest the composer for one minute, since if he wants something to sound like a trumpet it still seems simpler and less expensive to engage a trumpet player and so record his business than to operate a very intricate and costly machinery. The composer will of course be very keenly interested in those combinations of sine waves which will resemble nothing he has heard before. The dials of the oscillator can be set to produce every frequency within the limits of human perception. This range which covers a little more than eight octaves may be filled with about one hundred different pitches as long as we adhere to the twelve-tone scale. The oscillator will furnish more than 10,000 frequencies within the same space. The number of possible combinations of sine waves is therefore practically limitless.

But this is not yet the whole story. The sounds derived from the oscillator may be manipulated in many ways after they were recorded on tape. Dynamics, articulation, texture may be regulated through special ways of cutting the tape, by sending the sound through echo chambers, through filtering out certain bands of frequencies, feedback, recording backwards, raising or lowering the original pitch (which of course also raises or lowers the speed of the recorded material), and many procedures of this type. This is how those weird sounds come about which you can hear when the rocketship lands on the forbidden planet or a common flying saucer hovers over your swimming pool. Such sound effects are very tempting because they are

strikingly new and sensational, but since many of them re- (11)
mind the listener only too clearly of certain noises familiar in
nature or industry or in mixtures of both, they should be used
in music only with great caution. Besides, their novelty wears
off rather quickly, and gurgling and hissing, grunts and
groans become obnoxious instead of soothing.

In the short example by which I wish to illustrate this dis-
cussion of electronic music, I have not used any of these tricks.
What you shall hear is a passage from an oratorio entitled
"Spiritus sanctus, intelligentiae" - The Holy Spirit, the spirit of intel-
ligence. This work employs apart from electronic sounds also human
voices. These were recorded in the conventional manner through
singing the voice parts into a microphone. These tapes were later
synchronised with the electronic material which was constructed ^(recorded) and
independently. About one fourth of the whole work was produced
under my supervision in about four months at the electronic
studio of the West German Radio in Cologne. The section which I
will play for you presently is without voices. If the work had been
written in the traditional manner, one would have called this
passage an instrumental interlude. But as I have pointed out,
there were no instruments involved - the sounds which you will
hear were transmitted by wire from the oscillator directly to the
tape recorder. Nearly all of them are simple sine waves. Some
of these sounds were treated after the recording by
some of the methods mentioned before. Here now is this brief
interlude from my electronic oratorio.

electr. music

As I mentioned before, I selected this exhibit of electronic
music precisely because it does not contain any of those noises
which many people associate with the idea of electronic music.

But I chose it for a different reason too. This piece is an example
of the kind of advanced serial design the realization of which
could hardly be imagined without the use of electronic sound
production and tape recording. In terms of compositional

technique the piece is a four-part canon. I shall now try
to describe its design. It consists of two sequences of tones.

The first begins with the central tone of the gamut which
I had selected for the ~~work~~ work. This tone, of 330 ~~fr-~~
~~cycles~~ per second, corresponds to the E above middle C.

cycles

This tone line rises to the upper limit of my gamut - approx. 12
imately 3800 cycles - which it reaches after having run
through one third of its entire length. During the second third
it returns to the central tone, and in its last third it descends
further to the lower limit of the gamut, to the pitch of 30 frequencies.
The second line begins at this lowest pitch precisely when the
first line has reached its apex. It rises to the central tone
which it reaches when the first line has returned to it, so that
both lines meet each other in that point. After that the second
line goes up to the top which is reached when the first line has
arrived at its final point and its lowest level. The second
line then descends to the central tone where it comes to rest.
so that both lines present a symmetrical picture. Each
line consists of thirteen presentations of a seven-tone
pattern which is successively varied according to a serial
plan. The tone sequence of the second line differs from
that of the first in that it uses retrograde and inverted
versions of the patterns present in the first line. Each line therefore
has 91 tones.

These two lines were constructed and recorded inde-
pendently. Their canonic imitations were obtained by mech-
anical procedures as follows: to begin with, an accelerated
version of the first two thirds of the first line - that is, its
ascending branch from the central tone to the apex and its
descending one back to the central tone - was recorded.
Of course this version would not only be faster, but in
the same proportion also higher in pitch than the original.
It was so coordinated with the first line that its apex -
higher than that of the original - would be reached a little

after the
culminating
point of
the first
line.

The same process of acceleration ^{and coordination} was applied to the
corresponding ascending and descending branches of the
second line. Thereafter a second imitation of the ascending
branch of the first line was prepared, slower and consequently lower
in pitch than the original. This was so arranged that it would
reach its highest point when the two original lines crossed
each other in the central tone. It is followed by a similar imitation
of the descending branch of the second line. Finally, just before
the end of the piece the two lowest branches of either line were
repeated four octaves higher and thus at a very high speed.

In order to determine the rhythmic structure of the original
lines, I measured the time spans elapsing between the significant
points of the total design, i. e. entrances of the various imit-

ations and arrivals at the individual summits. Thus I ob- (13)
tained eleven time units ^{of varying lengths} into which the duration of the whole
piece was divided. These were now reduced proportionately
in order to fit the sequence of ninetyone tones in each line.
Since the time pattern consisted of eleven units, it was repeated
eight times, leaving out the last three tones in each line.
The difference between seven - which is the number of tones in each
group - and eleven - which is the number of time units - causes
the tone and time patterns to overlap. For example: the first seven-
tone group uses the time units 1 through 7. The second tone-group
employs the time units 8 through 11 and 1 through 3. The third
tone group has the time units 4 through 10, and so forth.
Thus within a high degree of unity a great deal of variety
is obtained. ↓

If this analysis sounds complicated, you may rest assured that
the thing itself is no less complex. The point I wish now to bring
out is the element of predictability of what I spoke before. At
face value we should assume that music which follows a course
so strictly predetermined as the procedures described here
indicate, is predictable in every detail. Thus it also should
have a high degree of immediate intelligibility, for we know
that the appeal of traditional music is due to the fact that
its processes are highly predictable in that at least in
the harmonic dimension the sequence of events follows gen-
erally preestablished patterns. A very elementary example
will suffice to demonstrate this condition. When in funct-
ional harmony we speak for instance of a "deceptive" re-
solution of a dominant-seventh-chord, the very use of
the term "deceptive" implies that there exists a standard
resolution of such a chord, established through long
habit, and that a deceptive resolution represents a
deviation from the standard. But even the available
deviations are limited in number and become in turn
standardized.

The character of predetermination as described in the
analysis of my electronic example is of a quite different
nature. The plan according to which pitch and time
sequences are ordered here makes it practically impossible
for either composer or listener to guess what is going to

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happen at any given moment. Only an electronic computer could give an advance picture of the musical process resulting from the serial assumptions that cause it to exist. In other words, what we actually hear might in the perspective of traditional music be called a chance result. To put it in very simple terms: by ordering what tones should enter at what intervals of time, the composer can not for instance postulate in addition what harmonic combinations should appear at any given point as a result of the previous stipulations. He will have to accept what is produced by the mechanism he has set in motion. If this sounds shocking, we might ponder for a minute whether a composer who decided to write something in the popular key of C major did not too have to accept a great many assumptions implied in the rather involved notion of C major, no matter how freely he thought he was able to proceed in other directions. At this late point we shall not pursue this train of thought any further.

The fact remains that strict determination of a sufficient number of variables springing from a free choice of serial assumptions determines the remaining variables to such an extent that they are removed from arbitrary control. In other words, there are no variables left to be manipulated. As far as this applies to the technical aspects, it may be of little concern to the recipient of the music so contrived. As long as the music communicates something to him, he will not care about how it was put together.

However, he might become alarmed when he is given to understand that expression of moods and sentiments, commonly believed to be the object of musical communication and the essential motivation of musical utterance, belongs to those variables which can not any longer ^{be} manipulated at will by the composer. From this we should not conclude that what transpires as a result of his operations is a matter of indifference to the composer. Strange as it may seem, he still entertains the ambition to be regarded as a human being. From where he stands now, it looks to him as if the act of composition was transferred from those areas in which it had been located traditionally to the vastly

uncharted territory of serial calculation. To those who object that processes of total determination eliminate the element of surprise believed to be indispensable in art he will reply that if the serial calculations contain proper combinations of sets of constants and variables the surprise element is so to speak built-in. To those who anxiously or indignantly ask what sense it makes to create music which is not intent upon communication he will reply that any music communicates whatever, and as much as, the listener is willing and able to find in it. For the rest the question would have to be addressed to an oracle that presides over the crossroads of the future. In other words it is irrelevant. Whether it makes sense to inspect the other side of the moon we shall know only after somebody went there. But go he will even if he does not know the sense of it. With this thought I conclude my brief outlook across the new frontiers of music into the areas which will be explored through the balance of our century.

~~12.31~~
~~10 min~~
~~17~~
~~3~~

	17 speech		
14.24	8 Effects	8	17
33	5 Louisa	5	4
14.35	9 Lament	9	21
14.40	39	5	
	5 Trump	7	
	44	39	
14.43	7 Fest		
14.51	51 Malance		
	4		
14.53	Fest. 3 7/8 fr. center		
58			
15.02			
15.09			
7			