"Wow and Flutter"

A Short History of the San Francisco Tape Music Center (with excerpts from interviews with Ramon Sender, Pauline Oliveros, Anthony Martin, Morton Subotnick, and William Maginnis)

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Founded in 1961 in order to provide a group of local composers with a studio for the production of electronic music and a venue for the presentation of their works, the San Francisco Tape Music Center was at the forefront of certain advances in musical aesthetics during the 1960s. Composers working at the Tape Music Center pioneered new forms of electronic music incorporating visual and theatrical elements that set them apart from other composers working in electronic music studios in both the United States and in Europe.

During the decades following the Second World War, composers increasingly recognized the enormous potential of electronic music. In the 1950s, this new and exciting musical resource captured the imagination of composers active in Milan, Paris, and Cologne. By the 1960s electronic music studios had been established in Japan, South America, as well as in Europe and the United States. With the refinement of magnetic tape in the 1940s, recording technology had taken an important step forward, providing composers with a means to explore the virtually infinite expressive possibilities of electronic music. As composer Ramon Sender noted, just as it was once the case "that every composer must confront Arnold Schoenberg's Method of Composing with Twelve Tones and come to some sort of working agreement with it; today the composer cannot afford to ignore the experience of working with tape." (Ramon Sender, "The San Francisco Tape Music Center: A Report," unpublished manuscript, 1964, 5.)

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It was Sender who in 1961 took the initial steps toward the establishment of the San Francisco Tape Music Center. Sender was studying composition with Robert Erickson at the San Francisco Conservatory. The Conservatory had a two-channel Ampex tape recorder, which provided Sender with his first opportunity to experiment with “sound on sound” recording.

> **SENDER:** Yes. I went [to the San Francisco Conservatory] in 1959 to study with Robert Erickson and Pauline Oliveros was attending the composition classes and we met in ‘59 when we were both interested in improvisation—due to Bob’s interest in improvisation—and tape recording. The Conservatory had one home-style Ampex that was two-track playback, one-track record. And I remember how excited I was the day I realized I could record on one track, turn it over and then record a second track. That was my first experience with “sound-on-sound,” as it was called.

This led to the composition of *Four Sanskrit Hymns,* a work for four sopranos, four cellos, percussion, and tape recorders, first performed at the Conservatory’s Composer’s Workshop concert on June 14, 1961. Sender next decided to create an electronic music studio in the Conservatory attic.

> **SENDER:** I got some money together of my own and I started with a cold chisel and a hammer on the cement floor attic of the Conservatory banging holes into the cement so that I could lay down a plate, a two-by-four, and start constructing the wall to wall off the back of the attic, which now is a library. I’m glad to say my wall still stands. I built the room and I had a friend, who was working for KPFA as a technician, build me a small board.

He and Pauline Oliveros, who was also attending Erickson’s composition seminar, began a series of concerts, which they called “Sonics,” the first of which took place on December 18, 1961 and featured compositions created in the new studio by Sender, Oliveros, Phil Winsor, and Terry Riley. The facilities in the studio were modest; this led the composers to invent new sounds from every day objects, often enhancing their acoustical properties with contact microphones and a piano soundboard for reverberation. Two tape compositions performed at the first Sonics concert, Sender's *Traversals* and Oliveros's *Time Perspectives*, demonstrate that interesting music could be created using limited technical resources. *Traversals* used modified accordion sounds as well as sounds made by Sender's baby son bouncing in his crib; in *Time Perspectives*, Oliveros's first tape piece, the composer's source materials included sounds made from small found objects resonating in wooden apple crates as well as vocal sounds. Cardboard tubes served as filters and a bathtub functioned as a reverberation chamber. Hand winding a Sears Roebuck SilverTone tape recorder while in record mode made it possible to do variable speed recording which modulated the frequencies of Oliveros's sound sources. *Time Perspectives* was recorded in real time; as was the case with her other early tape compositions, she avoided cutting and splicing tape as much as possible.

> **OLIVEROS:** I was very interested in small found objects that I would attach to apple boxes – you know those wooden apple crates made great resonators. I would use things like curb scrapers from cars, and little things that vibrated. The box would amplify the sounds and I would pick them up with microphones: air mics and contact mics as well. I think I used my voice, too. I used cardboard tubes to filter sounds, bathtub reverberation, and whatever. It was a kind of mechanical, analog way of putting sounds together. And then I would do variable speed and drop things an octave or push them up.

The nucleus of composers who formed the San Francisco Tape Music Center shared a predilection for spontaneous music making. Oliveros's interest in improvisation dates back to the 1950s.

In 1957, along with Riley and Loren Rush, she formed an improvisation group that met weekly and recorded their improvisations for KPFA, a Bay Area listener-sponsored radio station. The initial Sonics concert concluded with a free improvisation with tape featuring Sender (piano), Oliveros (accordion), Winsor (trumpet), and Laurel Johnson (percussion). Group improvisations, later termed "Opera," were featured on every program in the Sonics series.

> **OLIVEROS:** We did a year of programs at the Conservatory. Maybe four or five programs. Mort Subotnick joined us and A. A. Leath, John Graham, and Lynn Palmer from Ann Halprin's workshop. We started doing things we called "Opera." And they were a lot of fun. They were improvisations that came out of the collaborative effort between the dancers and us, the composers.

The Sonics series continued into the spring of 1962. A concert on March 24, 1962 featured recent electronic music by Bruno Maderna, Luigi Nono, and Luciano Berio, composers from the Studio di Fonologia Musicale in Milan as well as Henri Pousseur's *Trois Visages de Liege* (1961, composed at the APELAC studio in Brussels). Maderna's *Serenata à 3* for flute, marimba and tape (1961), was a work for live musical instruments and tape, a genre which the composer initiated with his *Musica su Due Dimensioni* (1952), which would later become a focus of the composers working at the Tape Music Center. The program also included American composer James Tenney's *Analog #1* (1961), which was created at Bell Labs and was his first composition using digital synthesis.

Composers contributing to the Sonics series collaborated with dancers and challenged traditional distinctions between performer and audience. In one concert, John Graham and Lynn Palmer, both members of Ann Halprin's Dancer's Workshop, moved from room to room accompanied by tape music from a variety of sources. At one point in the performance Graham wandered down a hallway followed by a rumbling Maytag washing machine (with a long extension cord) filled with stones. The final concert of the series, on June 11, 1962, also included a collaborative work entitled *Smell Opera with Found Tape*.

One of the composers had found a tape in an alley, which turned out to be about a young girl who had become pregnant out of wedlock. Dancers sprayed audience members with a selection of perfumes accompanied by the tape. The concert also featured Sender’s *Tropical Fish Opera*, an indeterminate work played by Sender, Oliveros, Rush, and Subtonick reading from a fish tank with staves on four sides. As the fish moved across the staves the performers sounded the appropriate notes.

> **SUBOTNICK:** Well, at the last concert at the Conservatory—this is in the “Sonics” series—what happened is that at the time I was writing music for the Ann Halprin company, so we brought the Halprin company in for that last concert, and one of us had found a tape—I don’t remember who it was—but someone had found a tape in an alley and we sealed it and brought it to the concert. Ann Halprin was already into confrontation and everything and there were these new perfume kits that were just on the market where you could make your own odors, and so the [dancers] went through the audience and interviewed people and decided on an odor that belonged to that person and then would spray them. And while they did that we played that found tape for the first time. So we called the piece “*Smell Opera*” *with Found Tape*. The tape turned out to be a Sunday morning psychodrama about a young girl who had become pregnant out of wedlock. A church thing. It was stupendous; it was unbelievable!

The Sonics series was a great success; the concerts were well attended by both the public and the press. Several favorable reviews by Alfred Frankenstein, a strong supporter of the city’s new music scene, appeared in the *San Francisco Chronicle*. (Alfred Frankenstein, “Conservatory Test: ‘Romantic’ Side of Electronics,” *San Francisco Chronicle,* December 20, 1961, 40; idem, “Stimulating Sounds too New to be Named,” *San Francisco Chronicle*, March 26, 1962, 40.) When the following year the

Conservatory was unwilling to provide a budget for a second season (Sender had absorbed all the costs for the first Sonics series), Sender invited Subotnick (who had recently received a graduate degree from Mills College, studying with Darius Milhaud and Leon Kirchner) to pool their equipment. They moved in the summer of 1962, to 1537 Jones Street, an old Victorian mansion on Russian Hill. Along with them (on loan) went one square- and two sine-wave generators that Hewlett Packard had donated to the Conservatory. A new concert series was scheduled for the 1962-63 season now under the group's new designation as the San Francisco Tape Music Center.

> SUBOTNICK: [The final Sonics] concert, because of the *Smell Opera*, ended up notorious. The newspaper the next day said, "it literally stinks," and so the Conservatory began to feel that because of the noise we were making and the kind of publicity we were getting they couldn't afford to keep us there any longer.
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> So we left the Conservatory and had to find a new place, a house on Jones Street. By then Pauline had gone [to Holland], Terry had gone off to Paris, so it was basically Ramon and me. We pooled our stuff and moved into this house on Jones Street that we had been given because they were going to tear it down. And we decided to incorporate, because we had gone to see a woman who had a lot of money and she said she would give us money, but we would have to form a nonprofit organization. So we paid $125 to become a nonprofit corporation and then she gave us a check for $25!
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> We decided to call it the Tape Music Center because Cologne and the Paris studio and Columbia-Princeton were involved in this big argument about *musique concrète* and pure electronics, and computers, and everyone hated everyone else. There were only ten people in the field and all ten people

> hated the others. It seemed to us that we were really not interested in the academic dispute and since everything ended up on tape, we called it the Tape Music Center, so that it could include everything.

As an autonomous, unaffiliated organization the members of the Tape Music Center were free to continue to explore the new directions they had opened up during the previous year. Tape music remained a primary focus, but this was joined by free improvisation and interdisciplinary experiments in “total theatre,” an important trend in 1960s performance art.

The 1962-63 Tape Music Center calendar included a happening by Lee Breuer accompanied by tape music by Sender and Subotnick. Breuer was a writer and director who with Ken Dewey, R.G. Davis, and Ann Halprin founded the American Cooperative Theatre. Members of the R. G. Davis Mime Troupe (which later became the San Francisco Mime Troupe) presented *Event II*, a scatological piece pushing the limits of the avant-garde. It began with two nude dancers sitting on toilets in a mirrored closet pondering the process of producing stool. The audience sat on boxes of different heights, and was covered with a black cloth, which had head holes cut out of it. Other evenings featured poetry readings by Robin Blaser and the Beat poet Michael McClure and a play by Robert Duncan, all of which were joined by improvisations and tape music. Robert Lavigne constructed an “environment” for another concert during which the audience participated in the creation of a tape piece.

The culminating event of the season was *City Scale*, a happening created by Sender, Ken Dewey, and Anthony Martin (a visual artist who later became the Tape Music Center’s visual director) that further explored audience-performer relationships, but on a much grander scale. Dewey was a playwright who had begun to challenge various aspects of traditional theater. *City Scale* moved completely beyond the traditional venue for theatrical presentations; the entire city of San Francisco was the “stage” for a series of events, both planned and unplanned. The work was a collaborative effort. During a North Beach sequence, Martin created light projections on the blank wall of the Wells Fargo building. He also drew the score which served as a blueprint, plotting “time and space throughout the evening.” Audience members were shuttled around to various locations in San Francisco; there was a book returning ceremony at the City Lights Bookstore in North Beach, a trombone player (Stuart Dempster) in the Broadway Tunnel, and a women in a bathrobe singing Debussy in a storefront window.

> **SENDER:** The third concert was a real “happening” called *City Scale*. I did it with Tony Martin, who later became our visual director, and Ken Dewey. The score was published in the *Tulane Drama Review*. It maps out the evening. It was basically: the audience signed in and then was taken up to a hill overlooking North Beach; and then we had a car “ballet” in North Beach which ended up being somehow distinctively marked so that you would notice them up on Coit Tower facing the audience; and [the cars had] gels on their headlights and then firecrackers going off in the bushes under them; and then there was a trombone player in the Broadway tunnel; and one of the nicest things was that when the audience walked back to the Center there was a piano tuner workshop on the corner and we had a woman in her bathrobe singing Debussy in the window. What was wonderful was the mix of reality and staging. You never knew what you were experiencing was actually in the piece or not. We were trying to sensitize people to really look at what was going on. So there were all kind of alert for things happening, wondering “is that really part of it?” I think we [also] had a broken down vehicle with two of Ann Halprin’s dancers; John Graham was pretending to teach Lynn Palmer to drive and they were having arguments.
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> We ended up at a city park, and actually ran into the beginning of a rumble, which was really interesting. There were these kids in two groups

> about to go at each other and suddenly this truckload of people showed up and ran screaming across the park towards these weather balloons that I had blown up. And the kids really thought something really odd was going on. We also did a “book-returning ceremony” at City Lights giving people books to put back on the shelves, because we figured so many books had been stolen from the bookstore over the years.

In many cases the audience was unsure whether the action around them was “real” or part of the piece. This was precisely the objective of *City Scale*: to blur the boundaries between art and life. As Sender explained, the most successful events in the evening

> were those which impinged upon the life of the city, interacted with it, transformed it or absorbed into the structure of the work. The arrival of the audience in two trucks at a small park perched high on a hill overlooking the Mission coincided with a collision between two teenage gangs in the park. I had arrived early to inflate four seventeen-foot weather balloons, and noticed the kids collecting. Just as the two groups started toward each other, our trucks full of excited participants roared up. Sixty people started running across the park towards the balloons, and the teenagers scattered to the periphery. I don’t know what went through their minds in the minutes that followed, as adults chased balloons and each other through the park. (Ramon Sender, Notes for score to “City Scale,” *Tulane Drama Review* 10 (1965), 186.)

The Tape Music Center remained only a single season at 1537 Jones Street; a faulty electrical system resulted in a fire that destroyed the building.

> **SENDER:** I changed the fuse in the fuse box that short-circuited the attic. Well, you know, we had a series of happenings there and everybody kept

> joking saying, "well for the last one we'd burn the place down, ho-ho-ho," because they're going to demolish it anyway. And actually, we had rented 321 Divisadero, and moved our best equipment over because we were subletting to various artist-types upstairs, including the attic. The guy in the attic never had any electricity. He was running off a long extension chord. One day I went to collect the rent for the last time and say good bye, and turn them over to whomever else was going to have the building. I took one last look for the fuse box and I found it and put a fuse in, and then glanced up the stairs and saw that his lights were on. So then he walked me downstairs and out the front door and we looked up and there was a red glow coming from his bedroom window. And he went running up and the next thing I knew he had punched his fist through the glass and shouted "Fire!" and came running out. I went across the street and called the Fire Department. The Fire Department came and some of our subscribers, who lived in the neighborhood, had heard about it I guess over the phone. One guy from North Beach came and said, "Wow, great event!"

Sender and Subotnick had already found a new location at 321 Divisadero Street, on the eastern edge of Haight Ashbury. The building contained two auditoriums, one of which they sublet to the Ann Halprin Dance Company, the other they shared with KPFA. The electronic music studio was located on the third floor. During its three seasons at 321 Divisadero, the Tape Music Center evolved into the most prominent venue for experimental art in San Francisco and gained a national reputation for musical innovation. It also continued to develop a unique artistic mission.

> SUBOTNICK: So we moved to Divisadero Street and we took the attic and rented out the two halls. It was a great building: there were two large

> spaces, they could each easily seat 150-200 people, each with a small stage, and so we rented one space out to KPFA because they wanted a sound booth and there was a logical place for it there. They renovated the space into a concert hall and added in the sound booth and paid us $100 a month (our rent was $150 a month). Then we rented out the other space to the Ann Halprin company for $100 a month, and we all shared the utilities. So we actually had enough money between the two rentals for upkeep and such and we didn’t have any rent to pay. We also had use of the KPFA space to do our concerts. It worked out really well. We ran the studio there for two or three years, and it became very well known. People came from Sweden on grants—you know, they had the choice of Columbia-Princeton or the Tape Music Center and they chose us.

In the 1950s and 60s, the equipment necessary for the creation electronic music was expensive. As a result, most of the studios depended on the financial support of state-sponsored radio stations, research organizations, or academic institutions. Composers in the Tape Music Center, as members of an independent private organization, avoided the sorts of orthodoxies that characterized the larger, more affluent studios. They defined themselves in terms of a new musical sub-culture, an alternative to what they saw as the artistic paralysis characteristic of musical institutions across the country:

> There is a growing awareness on the part of young composers all over the country that they are not going to find the answers they are looking for in analysis and composition seminars of the academies. Some retreat from the “avant-garde” music environment, live marginally on the fringe of the community, or attempt to work isolated from musicians and concert groups. They have insulated themselves by this isolation from the sickness of culture, but too often also from their own creative potential. Others have

> banded together and have produced concerts of their works outside of the usual organizations. (Sender, “The San Francisco Tape Music Center: A Report,” 2.)

Public access was at the core of the Tape Music Center’s artistic mandate. Its organizers saw the Center as

> a community-sponsored composer’s guild, which would offer the young composer a place to work, to perform, to come into contact with others in his field, all away from an institutional environment. Each composer would, through his contact with the Center, be encouraged to fulfill his own musical needs and develop his own personal language. He would have the advantage and support of all the facilities of the Center, for rehearsals and performances of his music, for contact with other musicians and composers, [and] for work in the electronic music studios. He would be encouraged to involve himself in the musical life of the community-at-large. The community in turn would be offered the services of the Center as a music-producing agency for films, for plays, for churches, and [for] schools. Such a program, carried through in detail, could produce a revolution. It would, I believe, in five years time, create a new cultural environment in at least our local area. Working closely with musician’s organizations and cultural and civic groups, it could break up some of the stagnant areas of our own local cultural environment, such as the traditional repertory of symphony and opera, the pork-barrel city band, the entrenched conservatism of some of the chamber-music organizations. (Ibid., 3-4.)

This social agenda distinguished the Tape Music Center from the many other electronic music studios established during the same period. Its members also continued to forge new creative paths involving improvisation and artistic collaborations with theatrical elements, dance, and light.

Experiments with light and sound were part of the growing interest during the late 1950s and 1960s in collaborative work breaking down disciplinary barriers. During the 1960s, light shows, an outgrowth of the “polysensorial” environments associated with the “Acid Tests,” became a major component of the psychedelic rock scene and were regularly featured at many dance and concert venues such as the Fillmore, the Matrix, and the Avalon Ballroom. Seymour Locks, an art professor at San Francisco State was a major influence upon the development of this medium. Locks had studied experiments with light projection in the early twentieth century. (For example, in the 1920s Laszlo Moholy-Nagy, a member of the Bauhaus school, worked on plans for a “Theatre of Totality” based on a synthesis of various art forms, including lighting.) In the 1950s Locks devised a method for light projection using an overhead projector with hollow slides and plastic dishes filled with pigments that could be stirred and swirled, thus creating moving patterns of light. Elias Romero, a painter and poet who was also one of Lock’s students, learned the technique and began to present light shows at parties and other venues. Romero also collaborated with Bill Ham, another light show specialist. The two artists worked with floating colored emulsions, rotating color discs, and slide projections, all having the effect of an of a new form of kinetic art.

Several pieces in the Tape Music Center’s 1963-64 program used light projections. For example, Subotnick’s *Theatre Piece after Sonnet 47 of Petrarch* (1964) included a set by Judith Davis, dancers (John Graham and Sarah Harvey), and light projections by Anthony Martin. Martin, who had worked at the Tape Music Center during the previous year, had learned liquid projection techniques from Romero. A painter and former student at the Art Institute of Chicago, Martin developed a beautiful repertory of visual imagery created with hand painted slides, liquid projections, film footage, and other techniques. He was in essence a “visual composer” working in real time using film, prepared slides, overhead projectors with various images and found objects, and liquids on plates to create a changing visual presentation.

Along with Sender, Subotnick, Oliveros, who had rejoined the group after completing a residency in Europe, and studio technician William Maginnis, Martin became a core member of the Tape Music Center.

> MAGINNIS: The day we met [Ramon] handed me a key to the front door. I said, "Are you kidding?" He said, "Come in anytime you want; work so many hours." Yes. I think he said work two hours a day for maintenance, that sort of thing. I must have arrived at the San Francisco Tape Music Center in the summer of 1964. Michael Callahan [who was the Center's technician earlier] had done a great deal of very fine work. The basic layout of the studio was really classical and classy as well. It centered around a patch bay, once part of a cryptograph I think, and was logically laid out. Each row or patch strip was essentially dedicated to an equipment rack in the room. All lines were supposedly balanced, 600 ohms, and line level +4 dbm, at least that was the idea. In reality, that was the problem. Most of the equipment we had was not balanced or 600 ohm, line level. Hum of the 60 Hz flavor was a common problem. We never really had a mixer, and the lack of a common mixing point was a very large problem. My first project was to build a keyboard system that served as a mixer of sorts, and caused other problems that might have been solved with a real mixer.

Martin's light projections, along with other theatrical elements and improvisation, became defining elements of their collaborative interdisciplinary approach to electronic music, an aesthetic exemplified by Sender's *Desert Ambulance* (1964), a composition for accordion, tape, and light projections. Composed for Pauline Oliveros, the score for *Desert Ambulance* consisted of instructions given to the performer through headphones. This made it possible for the work to be performed in the dark so that the audience could view Martin's light projections, made with hand painted slides and painted 16mm film projected onto Oliveros as she was playing the accordion.

> MARTIN: I was scoring my visual pieces to some extent, and going back to *Desert Ambulance* which I did with Ramon, and which I composed on my own after hearing the piece at Divisadero. I went home and orchestrated what I thought would be a successful visual event with some of Ramon's ideas, but I pretty much worked it out on my own back in my loft and decided to combine handmade slides that were cross-fading with film that was on Pauline and she was illuminated just by the film. It had a little cutout shape that I put in the slide projector.
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> Ramon had a really good time with it. I loved the sound of the piece. Ramon essentially played the tape part [for me], then I went home and did my part and we brought it together. Now this tended to be a *modus operandi* for us. I would either hear a piece or we would talk about it. I would go back into my life, which was partly a painting life, and Ramon would go back to his. [The same was true when I worked with] Pauline or Mort. We would meet again at Divisadero and talk about it some more or maybe we didn't, but then we brought it together to see what it would look like.

In the Spring of 1964 Oliveros organized a festival celebrating the work of pianist and composer David Tudor which featured compositions by Tudor, Oliveros, George Brecht, Toshi Ichyinagi, Alvin Lucier, and John Cage. The "Tudorfest," co-sponsored by KPFA, was a significant event in the history of the San Francisco Bay Area new music scene, demonstrating the artistic diversity of the avant-garde from the minimalistic explorations of barely audible piano sounds (played by Oliveros and Tudor) in Ichyinagi’s *Music for Piano No. 4* to the instrumental chaos of Cage’s *Concert for Piano and Orchestra* (1958) and *Atlas Eclipticalis* (1962). Tudor performed as soloist in Cage’s *Cartridge Music* (1960) and *Variations II* (1961).

> OLIVEROS: In 1964 I organized a festival called the “Tudorfest.” It was a six-day festival and it featured the music of John Cage, Alvin Lucier, Toshi Ichianagi, and myself. I had met David Tudor the year before and we had performed together. So this festival was organized and David selected the music. It turned out that John Cage came to this festival, and so did Toshi Ichianagi, Tori Takemitsu, and Kuni Harayakiama, who was the husband of Aki Takahashi. And a Japanese journalist came too, so the festival was very well covered by him.
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> I had an interview with John Cage on the radio and he was really very happy because we were doing *Atlas Eclipticalis* with *Winter Music* and the performers were Terry Riley, Mort Subotnick, Steve Reich, Stuart Dempster, with Ramon Sender conducting. I was playing in it, and so was Stanley Shaff. It was a very interesting collection of local musicians. I think John Chowning and Lauren Rush also played.

The success of the Tudorfest and the other concerts in the 1963-64 season placed the Tape Music Center at the forefront of developments in new music around the country. In the summer of 1964, Oliveros, Sender, Subotnick, and Martin went on tour, playing concerts on the East Coast and in the Midwest. After returning to San Francisco, they decided to program new works by local composers during the 1964-65 season. A concert on November 6, 1964 devoted to music by Terry Riley included the world premiere of *In C*, a seminal work in the development of minimalism. Martin’s light projections served as accompaniment; he projected shapes from within the group of performers out into the audience using a prism, a few lenses, and three or four projectors.

> MARTIN: Yes, for *In C* I felt I didn't want to be projecting from the outside in, I wanted to be projecting from the inside out. So I sat with them in the middle and had a bunch of little projection things: very simple, extremely simple, I had a prism, a couple of lenses, three or four projectors that were modified where I could dial the light up and down (columnated beam), and basically, I just moved shapes through the people and into the environment. The color event was that I was moving shapes of light small and large, lines, and shapes, and shadows of the musicians. There were about six musicians or eight in that first performance. It was concentric. And that was also the way I liked to work with Pauline, from the inside out.

Another important concert at the Tape Music Center on January 27, 1965 devoted to the music of Steve Reich featured *It's Gonna Rain* (1965), Reich's first piece using his phasing technique.

Although the studios were more sophisticated than those at Jones Street or at the San Francisco Conservatory, the facilities at 321 Divisidero were certainly not comparable to European and American electronic music studios with institutional support. In addition to tape recorders (including an Ampex three track recorder) the resources available to composers working at the Tape Music Center consisted of equipment obtained from military surplus, scientific laboratories, and telephone companies.

> SUBOTNICK: The equipment didn't really amount to much. Most of it we had gotten over the years from junkyards and used equipment places or we borrowed equipment. The biggest amount of equipment we got was from an insurance company, Ramon and I were really wheeler-dealers. We had these inroads to these places and insurance companies that insured hi-fi stores

> would call us and say that a hi-fi store had burned down say in Denver and they needed to get rid of the stuff because it was in a warehouses in San Francisco and if we gave them $500 they would give us the entire thing. But we didn't have $500. So we made out a check for $500 on a Friday and we rented a U-haul truck, and picked up the equipment (so now we are $650 in debt) and we thought we would just make a bunch of pieces over the weekend and then we'd give it all back. The check bounced of course, but they didn't want the equipment back. They kept sending our check in again and again, saying there must be some mistake. And then we put an ad in the paper and we sold several of the intercoms. We sold seven hundred dollars worth of intercoms, so we actually made a few bucks on the deal. Most of the equipment at the early Tape Music Center was from that sale.

The limitations of the equipment at the Tape Music Center notwithstanding, In 1965 Subotnick and Sender played a role in the development of a new instrument that would revolutionize electronic music composition. Seeking a means to streamline studio time by eliminating the laborious task of tape splicing, they enlisted the help of Don Buchla, a gifted engineer who also had a background in music. Buchla had been working on a voltage controlled modular synthesizer since 1963. In December 1965, he delivered an early model to the Tape Music Center. The new instrument, which he called "The Modular Electronic Music System," also known as the "Buchla Box," featured voltage-controlled synthesis, in which oscillator's frequencies, timbres, and amplitudes could be controlled by other oscillators or by control voltages generated by a sixteen or eight stage sequencer or other control voltage sources. Additionally, the Buchla's "touch controlled voltage source" was unique in that it was not a traditional keyboard interface, but instead a copper plate which had sixteen (twelve on the prototype) pressure sensitive "keys" in addition to two independent voltage outputs per key, plus a trigger. It significantly reduced the need for tape-splicing and, perhaps more importantly, created new possibilities for the generation of electronic music in real time. The Buchla's compact, portable design freed electronic music from the constraints of the classical electronic music studio, allowing composers to work at home and perform in concert halls and on tour. This emphasis on accessibility, consistent with the Tape Music Center's aesthetic mission, also responded to the growing impact of electronic music on contemporary culture. Buchla, Sender, and Subotnick were visionaries; they recognized that electronic music had "developed into a form that assumes all the roles of music in our culture, from concert pieces to film music and rock-and-roll," a situation that today has grown exponentially. (*User's Manual for The Modular Electronic Music System* published by Buchla Associates, 1966.)

In 1965 Subotnick's negotiations with Boyd Compton, an official from the Rockefeller Foundation interested in providing funding for the Tape Music Center resulted in a preliminary grant of $15,000 in 1965. The following year the foundation offered the Tape Music Center a grant of $400,000 (which they were to share with the Mills Performing Group, an ensemble founded by Subotnick, Luciano Berio, and Darius Milhaud), with the provision that they affiliate with an academic institution. The Tape Music Center had achieved national recognition and had finally secured substantial financial support. But, ironically, this success ultimately heralded the end of its activities. 1965-66 was the Tape Music Center's final season; in the fall of 1966 it moved to Mills College, becoming the Mills Tape Music Center (later re-named the Center for Contemporary Music), with Oliveros as its first director and Martin and Maginnis as its visual and technical directors. Both Sender and Subotnick declined the offer to move to Mills. Sender joined the Morning Star Ranch commune founded by Lou Gottlieb in Sonoma County. Subotnick accepted a position working for the Actor's Workshop, which had moved to New York City and was renamed the Lincoln Center Repertory Theater. He also began working as an artist in residence at New York University’s Tisch School for the Arts. Oliveros’s arrangement at Mills lasted a year. In 1967 she accepted a teaching position at the University of California, San Diego. Martin moved to New York, joining Subotnick at New York University. Maginnis left Mills in 1968 for a job running and maintaining a studio in San Francisco’s Avalon Ballroom.

It is not surprising that, in the end, the members of the Tape Music Center resisted institutionalization. From its very beginnings, they had enjoyed a high degree of independence and self-sufficiency. Its commitment to community access and rejection of traditional concert music culture distinguished the Tape Music Center from institutionally supported electronic music studios. The modest facilities at 321 Divisadero had more in common with the small presses, underground newspapers, and filmmaker’s collectives that had increasingly emerged during the 1950s and 60s as alternatives to corporate control and commercialization of the arts. In purely aesthetic terms, composers at the Tape Music Center also diverged from the mainstream. They pursued an alternative path away from academic high modernism and its obsession with technology, total serialism, and other theoretical approaches to electronic music. Their interest in “happenings” and other theatrical forms placed the composers at the Tape Music Center within the resurgence of avant-gardism that began after the Second World War and had gained momentum in the early 1960s. The dynamic interplay between avant-garde art and new technolgies that emerged in the free thinking cultural environment of San Francisco resulted in a radical aesthetic applied to electronic music. Fortunately, although the original members of the San Francisco Tape Music Center decided to pursue their own separate careers, the creative spirit which they cultivated for five years did take root at Mills College as its Center for Contemporary Music has continued to the present day as a leading exponent for experimental music.

Postscript

—excerpt from the novel *Naked Close-Up* by Ramon Sender. (Although all the main characters portrayed in this story are fictitious. Many of the concerts, events, and happenings described in this book actually took place in or around the San Francisco Tape Music Center.)

In the meanwhile, letters were coming regularly from the Rockefeller Foundation, encouraging us to make a decision about whether or not to affiliate with a college and go for the big money. Feeling a little pushed, I called a Lab meeting to decide once and for all what we were going to do. "Personally, I'm for it," I said. "I'm sick and tired of squeezing small donations out of tight-fisted patrons and worrying about the monthly bills. We'd all go on full salaries and have a large equipment budget. It's the answer to our dreams!" "Where?" Perennia asked. "Milpitas?" "Where else?" I asked. "San Francisco State's music department is still arguing over Schoenberg. U.C. Berkeley is worse. No, Milpitas is the best bet. I'll figure out some way to keep the department chairman out of our hair." "Sounds good," Steve said. "Imagine having money and an equipment budget!" "I'm against it," Walt said. He frowned and twirled his moustache tips tighter. "Institutions are death." "There'd be a Visual Department budget?" I added, "including all the film you can use." I wasn't above dangling the bait in front of his face. "At how much a year for us?" Walt asked, the rpm of his twirling accelerating. "Five thousand apiece but up each year a thousand," I said.

There was a lengthy silence. Each of us thought about the impact of all that money on our lives. "No!" Walt shouted and rose to his feet. "No, indeed and indubitably no and again no!” He leaned towards me, pressing both palms against the table. “Now is not the time to retreat behind ivy-covered walls into the ivory towers of academia. Instead, it’s a time of awakening to our true selves, to the totality of who we are and what we’re here to do.” He lowered his shaggy head to glare at each of us in turn. “America’s re-tribalizing,” he said in a quieter voice. “I’ve read a little anthropology and a little sociology and that’s what it is. We’re re-tribalizing and goddamn it’s about time! Communal families—groups of people living together—the tribal model’s the natural one for our country. That’s what grew here before Europe began sending over its misfits and renegades.” He glanced at me. “Look where your own work is leading you! Look at what we really have here—a tribal family in the house-in-back and then all of us—the dancers, the KPFA folks. We’re doing it already! Our true strength is that we’re beholden to no one but ourselves, not to Standard Oil’s Rockefeller who’s fucking bleeding off Mother Earth’s vital juices and not to the state college system! You know we’d have to get fingerprinted and take an oath of allegiance or something if we went to Milpitas!” “Is that true, Norm?” Perennia asked. “They’d make us take an oath?” “It’s just a formality,” I replied “All state employees have to do it. But look at the advantages. We’d have a one hundred and fifty thousand dollar grant spread over three years.” There was another pause. Everyone spent the money in their imaginations and balanced it against their consciences. “And as for this tribal thing,” I continued, “Priscilla’d never go for it. She can’t live in the same house with other women.”

“I have plans for this place,” Walt said. “I want to do New Age Sunday church services here with the Merry Pranksters. And Stewart and Kesey want to do a Trips Festival.” “A what?” I asked. “A Trips Festival,” he repeated, waving his arms in exasperation. "Getting everyone's trips together in one place. Three nights in Longshoreman's Hall with The Grateful Dead and two other bands. The Lab could have half of one evening." He went on to describe the astonishing details. The newspapers had been full of pictures of Kesey standing in front of a garishly painted bus full of smiling faces. "The first night would be Stewart's "America Needs Indians" multi-media event, Open Theatre from Berkeley plus The Loading Zone—what a combination! We'll knock'em dead!"

"Acid Test? Loading Zone? Grateful Who?" I echoed, my mind in a whirl. "I haven't the vaguest idea of . . . What about our concert?" Perennia asked in dismay. "This isn't until late January," Walt said. "But it'll take a lot of preparation." "I don't think we can do it," I said. "And besides, what's this got to do with . . ." "Look, here's my idea." Walt said. "We get a rock band and blast them through the synthesizer—you know, hang a bunch of strange thing-modulators between the guitars and the speakers and then gradually transform the live sound into choirs of angels. Easy to do. And get Don Buchla involved, maybe building some special stuff for it." He grinned at us disarmingly. "You know, pull out all the stops. I'll do the visuals, a combination of the usual films and slides and overheads plus we'll invite all the local film-makers to bring down films and we'll run them off at the Sunday grand finale. We've already got Bruce Conner and Bruce Baillie and Anthony Martin and . . ." "Whoa, there, whoa!" I said. "I for one don't want to involve the Lab in such a strange project just when we're trying to impress everyone with how professional we are!" "Well, then I'll resign from the Lab and do it myself," Walt replied. He folded his arms and leaned back. "Look," Perennia said. "Take a leave of absence for a month and go do it. They're paying you, aren't they?" "Great!" I said.

"We won't pay your January salary and that'll give us more money for musicians at our next concert or go towards the synthesizer. You go do your Flips—er—Trips Festival." "But do you or don't you want the Lab involved?" he asked. "I mean, I think it would look good. There are going to be one hell of a lot of people there." "There's exposure and there's notoriety," I said. "We want the former, which could lead to fame, instead of the latter which . . ." "Could lead to infamy ho-ho," Walt chortled. "Very dualistic in your thinking, Norm!"

That peeved me. "If you had the possibility of one hundred and fifty thousand dollars hovering at your fingertips, which you do, by the way, if you'd only wake up, it would make you a mite careful about your public image. I mean, why can't we just play it safe for now and then after we get the grant pull all the stops?" "I like the Trips Festival idea," Steve said. "Count me in, Walt. Do you think they'll pay me too?" "But we're paying you!" I sputtered. "Not that you ever do anything!" I shouldn't have said that, but I did and Steve looked hurt and began to tabulate every little item he had fixed. "And besides, I do have time of my own," he added with injured dignity. "I'll work for them on my off hours." He sniffed. "Even if I have to sleep at my work bench."

"I don't think there's any harm being involved in the Trips Festival," Perennia said. "It sounds like a good cause. How about a special Sunday afternoon program at the Lab of Norm's and my tapes? We could say a few words, you know, beforehand." "Great! Great!" Walt shouted. "There could be side trips at the Trips Festival! Like *City Scape*! We'd turn on the whole city!" "All right, I capitulate," I said. "We'll do the Trips Festival, but now what about Milpitas? I've got to write something to Rockefeller one way or the other." "I vote for it," Perennia said. "I agree with Norm. I'm sick and tired of scuffling for pennies." "I'll go along with that," Steve said, "but can't we keep a branch here in the city?" "If we do it, we do it," I said. "But there's no reason why you can't keep renting the house-in-back." "Count me out," Walt said. "I'm thinking of retiring to the desert and joining the Hopi." "Aw, come on, Walt," Perennia said. "It'll be fun." "No, no, I can't," he said with a solemn head shake. "The money's tempting and all but I felt I'd be selling out for a mess of pottage." He got up and stretched. "I promised Sarah to take the kids out for a while. You guys go ahead and work out the details." He started for the door, but stopped to deliver a final summing up. "I think you're making a big mistake. The Lab has been something unique and you're turning it into an appendage of your job, Norm. That's not right! Institutions are not proper places for artists. They stand against everything we believe in. They put up rational-sounding arguments against what your heart, your liver, your spleen, and kidneys know. And what's that? That each person in the tribe is like an organ within the body, performing his or her unique function. "Homo Gestalt" is what some science fiction writer—Theodore Sturgeon—called it. A group of people whose sum is greater than its parts. The Lab is a Homo Gestalt and I'd like to see that gestaltness increased rather than absorbed—digested into a lifeless corpse. I vote instead for the imminent tribalization of America. With the help of mind-expanding chemicals, the White Man is coming to his senses and adopting the tribal way of life which is, after all, still the way of the majority of people on this planet." With that he left and the meeting broke up.