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RADIO INFORMATION MANUAL: ACCESS, BUILD, BROADCAST

FREE RADIO



APPROVED BY THE OFFICES OF INFORMATION, PROGRAMMING, AND TECHNOLOGY
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FREE RADIO

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This manual was published in an edition of 2,000 to serve as reference material for *Free Radio*, a project at CUE Art Foundation from March 24 through May 5, 2012 that used the space as a laboratory for community individuation, voice, and the investigation of broadcasting. The views expressed in this manual are solely those of the authors and do not necessarily reflect those of CUE Art Foundation.

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CHAPTER I

The Free Radio Primer

Short Synopsis:

Free Radio is a community-based project that uses CUE Art Foundation's gallery from March 24 - May 5, 2012 as a laboratory in which a different local community is aided each week with the construction of an on-site radio station and the development of radio programming relative to that community. Each one-week session is comprised of a series of activities directed toward community building, the development of a voice, archiving that voice, and learning skills associated with radio technology to disseminate that voice. This will culminate in a public broadcast produced entirely by that community and transmitted to the greater New York City metropolitan area.

Longer Synopsis:

Free Radio is a community-based project that uses CUE Art Foundation's gallery from March 24 - May 5, 2012 as a laboratory in which a different local community will be aided each week with the construction of an on-site radio station and the development of radio programming relative to that community. Each one-week session will be comprised of a series of activities directed toward community building, the development of a voice, archiving that voice, and learning skills associated with radio technology that will culminate in a public broadcast produced entirely by that community and transmitted to the greater New York City metropolitan area. This process will be perpetually archived and transmitted via the Internet as well, so as to simultaneously preserve and broadcast the process beyond the walls of the gallery and the range of the radio broadcast. The ultimate goal of this project is to publicly seed community development and training relative to radio broadcasting so as to make the notion of organizing a community to broadcast its voice something that is both more valuable and accessible to the public at large.

Free Radio was conceived of by artists, is sited at CUE Art Foundation, and driven by the reconsideration of a gallery as a cultural hub. The gallery will serve as a place that uses art to catalyze discourse and the dissemination of information, and as a site for tool building while mining and solidifying the identity of a community. *Free Radio* was born out of a belief that every community has a voice that could be a relevant part of a larger society, and an investment in the development and proliferation of this voice will make its community richer and in doing so contribute exponentially to a population outside of its own. This project is made possible by an international organization of people ranging from artists and computer hackers to scientists and educators who are in place to work with specific local communities to facilitate community individuation, the development

of a voice, and the weekly construction of a functioning radio station and culminating broadcast for the dissemination of that voice.

Free Radio hybridizes the idea of a sourdough starter and the notion that teaching someone how to fish is more valuable and resonant than merely giving someone fish. *Free Radio* is as much about being a witness as it is about being a participant. As such, a primary concern is the incubation and perpetual broadcast of this process of community individuation and the mass dissemination of a voice, whether live or as an archived loop on the Internet. It is about the mass distribution of open-source information, which focuses on the democratization of a technology that is free to access, relatively ungovernable, easy to build, and so important to a free society, radio.

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YOU!

The people who have a voice and make up a community, that makes up a town, that makes up a county, that makes up a state, that makes up a country, that makes up the world.

CHAPTER II

Liberating the Airwaves: Free Radio's Broadcasting Communities

Kareem Estefan

Radio is, famously, a location-less medium. It exists in the “ether,” neither here nor there. Often it meets listeners in transit: on the road one catches broadcasts from the local station, or tunes in to more remote content from satellite transmissions. Depending on where the dial (or on-screen arrow) lands, one hears either corporate content assembled by automatic playlists or carefully selected regional voices; however uncommon the latter, radio remains a rare haven for independent production. With *Free Radio*, Brian Gillis and Robin Lambert aim to expand the social space opened by community radio, helping underserved community groups to develop and transmit their “voices” through a DIY radio station that could be heard across the New York metropolitan area from CUE’s gallery.

Free Radio is the first collaboration between two artists who have recently expanded their practices into more relational territory. Gillis, a professor at the University of Oregon, gradually shifted from fabricating objects to fabricating situations that evoke human potential through the excavation of buried social histories. (He credits Howard Zinn’s *A People’s History of the United States* for helping to inspire this approach.) Lambert, who teaches at Red Deer College in Alberta, Canada, sets up situations with the possibility—sometimes curiously narrow—for strangers to interact. For example, in *The only thing I know for sure is that while I am looking for you, you are looking for me* (2009), the artist invited two strangers to live in Montreal, a city they hadn’t visited before, in order to find each other. After a month of searching, they never met.

As for Gillis and Lambert, the two first met at a ceramics residency in Maine, where they bonded over their interest in relational art practices. Influenced by the “social turn” of the 1990s, Gillis and Lambert separately began to set up conditions in which visitors would creatively interact with one another and their environment and thereby make the work of art. In such socially grounded practices, the meaning of the work—which may be understood as the performative process of the art event and/or objects resulting from the event—emerges from the context of the exhibit and its participants as much as it does from the artist’s intentions. Writing

about the as-yet unseen relational project by a new collaborative duo, then, is a strange and difficult task: *Free Radio* may arrive at results and implications entirely different from the artists’—and this writer’s—expectations.

Gillis and Lambert have plotted a course for *Free Radio*, and chosen multiple collaborators for their endeavor, but they have also kept many paths open within the trajectory of the exhibition. The two invited four other artists and educators to comprise the Free Radio Project, which will be the first of a number of groups to assemble at CUE Art Foundation for a week, build a makeshift radio station and produce a broadcast (they will determine its content and form that week). Members of this team selected the communities that will work in CUE one by one for the following five weeks, collaborating in workshops led by the Free Radio Project, as well as discussions, research, programming, and broadcasting. Within the workshops, each community will critically reflect on what unites them in order to develop a collective voice and then discover the most effective means of disseminating it, on the radio or otherwise.

As of this writing (early January 2012), Gillis and Lambert have confirmed four of the participating communities: their own Free Radio Project; UpBeat NYC, an organization that provides free music lessons to children living in the Bedford-Stuyvesant neighborhood of Brooklyn; *Verbal Pyrotechnics*, an online magazine of young adult literature, with contributors ranging from emerging writers to Beat poet Hettie Jones; and Brooklyn Youth Company, a theater group whose children recently participated in the very adult *Performa* biennial. Gillis and Lambert have empowered each group to produce a broadcast that will strengthen its community’s voice, whether that means airing a one-hour radio program, making prints, or building web pages.

The term “broadcast”—once used exclusively to signify radio and television transmissions—today more broadly describes the act of communicating information, and often refers to dissemination through a Facebook status update or Tweet. For the purposes of *Free Radio*, Gillis and Lambert use the word to encompass creative activities, in any medium, that will propagate a community’s message. To facilitate a diversity of approaches, they have set up workshops on a wide spectrum of communication methods and technologies, both electronic and analog, including “FM Radio, telegraph, photocopying, talking drums, homing pigeons, flower anatomy, and sign making.” (Their predecessors include numerous artist collectives of the seventies—such as Paper Tiger Television—which offered workshops in video production to diverse groups, although they thought of it more as public service than art.) After establishing this range, members of the Free Radio Project aim to provoke discussion as to which technique will best serve the voices of the communities, both in terms of clear articulation and wide proliferation. But Gillis is quick to note that the team of artist-teachers will cede all decisions to the communities participating in the project: “The choice will be solely theirs.”

CUE then becomes, in the artists’ words, a laboratory: “We’re thinking about this as something akin to us building a laboratory, stocking it with labware and raw materials, giving folks a cursory understanding of the principles that can be explored in a lab, giving them a specific problem to solve, and turning the lab over to them completely.” This analogy places the artists in a role that might be classified as curatorial, pedagogic, or even administrative: they will organize source texts and resources but leave production to others. In this case, how are visitors to evaluate the show? On what aesthetic, social, or educational grounds might *Free Radio* be assessed? The artists’ intentions are, in a sense, quite modest: in their minds, the experiments can only fail if the lab lacks the materials necessary for communities to develop their identities. At this point, there remain many open questions, including what the communities will produce and whether gallery-goers will participate in workshops or observe as groups learn to broadcast—in short, how the laboratory will look, from the people involved to the art made.

If questions about the relations and objects to be produced in this laboratory will only find resolution during the exhibition itself, Gillis and Lambert raise a more fundamental problem: what do we mean by “community,” and how can we better understand communal endeavor? A community, in the artists’ words, emerges through “a shared space, a shared cultural ethos, a shared need, a shared mode of communication, a shared voice, and a shared system for the distribution of information.” But for a community to exist, must its individuals share each of these diverse features? The tensions among these potential commonalities often come to define the nature of a community. For example, the six artist-teachers of the Free Radio Project have worked together largely through Google Docs and Skype, lacking common geography but sharing information and purpose remotely. In an era of networked communications, people are frequently linked across vast distances by cultural ethos or information, but lack a shared space. If the Free Radio Project is a “community” forged for the purposes of this exhibit, one wonders whether the already-existing communities will be adaptable enough to interact with visitors, the Chelsea neighborhood and even, in a new setting, each other.

These questions ultimately return us to an interrogation of the notion of “community broadcasting.” Can it spread creative forms of communication rooted in shared experience? While any single *Free Radio* broadcast is likely to have limited geographic reach, the project is a genuine test of how to extend communal expression beyond the art gallery—something each of the artists have individually worked to achieve in recent years. With this collaboration, Gillis and Lambert offer something utopian, especially in its optimistic trust in the community members who are tasked with the most important transformations of all. They must amplify their voices, by using the tools at their disposal. Perhaps more importantly, they will help re-define the words “broadcast” and “community” in the process.

The writer, **Kareem Estefan**, is a critic, poet, and curator living in Brooklyn. His writing has recently appeared in exhibition catalogues and in publications including *BOMB*Blog, *Le Salon*, and the *Poetry Project Newsletter*. He recently curated the *Segue Series* at the Bowery Poetry Club and hosted a WNYU radio program for conceptual writing, “Ceptuetics,” which is now archived on PennSound. He studies art criticism & writing at the School of Visual Arts.

The mentor, art historian **Robert Atkins**, has written for more than 100 publications, ranging from *The New York Times* to *Wired*. He is a former columnist for the *Village Voice*, and co-author, in 2008, of *Censoring Culture: Contemporary Threats to Free Expression* (New Press). His widely-known texts *ArtSpeak: A Guide to Contemporary Ideas, Movements, and Buzzwords* (Abbeville Press, 1997) and its modern-art companion *ArtSpoke: A Guide to Modern Ideas, Movements, and Buzzwords* (Abbeville Press, 1993), are among the best-selling art books of recent decades. He teaches and lectures widely about art and media. These interests have catalyzed more than 20 exhibitions including *From Media to Metaphor: Art About AIDS*, the first international traveling museum show of its kind, and *Fusion! Artists in a Research Setting*, for Carnegie Mellon University, where he is a Fellow of the STUDIO for Creative Inquiry. Since 1995, he has originated pioneering online media including the CUNY-sponsored *TalkBack! A Forum for Critical Discourse*, *Artery: The AIDS-Arts Forum*, the *Arts Technology Entertainment Network*, a *NY Times* start-up for which he was Editor-in-Chief, and, in 2010, *ArtSpeak China*, the first bilingual wiki devoted to contemporary Chinese art. A co-founder of Visual AIDS—the creators of *Day Without Art* and *The Red Ribbon*—he is the recipient of numerous awards for his writing. For more information, please visit RobertAtkins.net

This essay was written as part of the Young Art Critics Mentoring Program, a partnership between AICA USA (US section of International Association of Art Critics) and CUE Art Foundation, which pairs emerging writers with AICA mentors to produce original essays on a specific exhibiting artist. Please visit aicausa.org for further information on AICA USA, cueartfoundation.org to learn how to participate in this program. Any quotes are from interviews with the author unless otherwise specified. No part of this essay may be reproduced without prior consent from the author. Lilly Wei is AICA’s Coordinator for the program this season. For additional arts-related writing, please visit on-verge.org.

CHAPTER III

Free Radio

Dr. Jim Grubbs

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FREE RADIO

Grubbs

INTRODUCTION

They are all around us. Electromagnetic waves careening from all directions. Don't be alarmed. These cosmic vibrations are the very essence of all known elements. Each object in our universe, from individual atomic particles to the largest objects in space, emits unique wave patterns. When we learned to harness these electromagnetic properties in the nineteenth century, we began on a course of creating what we call "radio."

In this natural state, radio is free—free to travel wherever it wants—free to act as a carrier of information—any information—without bias and without restriction. Radio knows no geographical or political boundaries. Radio knows no single language. Radio knows no economic status. Radio knows only the universal and cosmic truth of its natural existence. While radio weakens in strength as it traverses the cosmos, it never completely goes away. In theory, every radio transmission from the beginning of time is still out there—somewhere—just waiting to be intercepted.

There is no natural cost for riding these waves. And even a concentrated effort to stop them is fraught with difficulty. Radio wants to be free. One might think of this as a corollary to Stewart Brand's (1987) (best known as editor of the *Whole Earth Catalog*) notion of Information Wants to Be Free. Radio is, at its most basic level, a carrier of information.

From the earliest transmissions, we as a society have searched for ways to utilize this carrier of information to meet the needs of our communities large and small. Radio has evolved into a real-time source of information, education, and entertainment. While the powerhouse stations of the big city serve entire regions, it's only natural that the content they broadcast must appeal to a large and diverse audience. It's the small town stations, the "mom and pop" operations, that continue to deliver news of small communities and provide the sort of entertainment most beloved by those communities. With the demise of many small town newspapers, more than ever, small market radio is an important

community resource. The best among these stations continue to fulfill the destiny of *Free Radio* on a very local basis (Grubbs, 1998).

This essay focuses on the ways in which radio brings the very fabric of small town and rural life into our homes, cars, and indeed, anywhere we travel. It is, in many ways, the antithesis of “mass media.” We begin by looking at some early broadcasts, consider recent threats to the existence of this important resource, and examine how some small stations have met that threat and continue to thrive. Finally, we’ll offer some insights into what the future holds.

In short, this essay embraces the notion of “free radio” as a powerful mode of communication. By necessity, this is a warp-speed overview of a vast topic, so we’ve provided a list of sources at the end that you may consult to learn more. See especially Sterling and Kittross (2001).

THE BROADCASTER IN YOUR NEIGHBORHOOD

The earliest radio broadcasts intended for the community were accomplished not by commercial interests but by hobbyist or “amateur radio” enthusiasts. The earliest transmissions (circa 1900) were primarily related to maritime interests and were intended for point-to-point communication—not broadcasting (DeSoto, 1936). In 1909 when the first radio clubs were formed, radio frequency energy was generated by allowing a spark to jump across a wide gap—a system suitable only for Morse coded messages. The frequencies used at the time were in the range of today’s commercial AM broadcast band and below (300-6000 meters). In the United States, the Navy was charged with policing the air waves since they were the primary user of the technology. Voice broadcasts came later.

It was not uncommon in the years prior to 1922 for a neighborhood “ham radio” operator to construct a transmitter and antenna system at his or her home. While some were content to communicate one-on-one (or “point-to-point”) with other experimenters, some saw the opportunity to use this evolving technology to transmit general public information and entertainment. Many a son, daughter, or spouse made their radio debuts demonstrating their musical talents or oratorical skills in a home rigged studio connected to an unlicensed and unregulated transmitter system.

A number of pre-1920 publications offered diagrams and descriptions of radio devices that could be assembled by the hobbyist, as well as news from their readers about their “homebrew” operations. It is through these publications and news stories of the day that we have an insight into the role of amateur or hobbyist broadcasters during this early period of radio.

While the Navy tried to maintain control of the radio spectrum at the turn of the century, they were ineffective with the general public (Marvin, 1988). The onset of World War I shut down all such operations but they came back in force even stronger after the war (Lewis, 1991). In January of 1922, hobbyists were restricted by law to only point-to-point communication. “Broadcasting” now

required a special license. The Radio Act of 1912 and later the Radio Act of 1927 served to codify the “rules of the road” for all wireless communication in the United States. The Department of Commerce and Labor was given the authority to fine those that operated outside of its strict code of rules.

As early as 1909, hobbyist Charles Herrold began broadcasts. As 1913 arrived, his broadcasts were on a regular but limited schedule of both music and voice performance. His station was later licensed in 1916 as 6XF and he was also authorized for mobile transmissions as 6XE. Wartime restrictions shut down all amateur stations in 1917, but he resumed operations again in 1919.

In 1919, Hugo Gernsback, a prolific publisher and champion of radio, included information about a test transmission featuring live opera. Unfortunately, the article doesn’t include the name of the opera house or the broadcaster.

An article in the November 1920 edition of *Radio News* titled “The Radio Preacher “ (and a similar story titled “A Real ‘Sky’ Pilot” printed in the February 1921 issue of *The American Missionary*) chronicles Charles A. Stanley’s amateur station, 9BW in Kansas, which featured Sunday night sermons by “the original radio preacher” Dr. Clayton B. Wells.

Also in 1920, *The New York Times* carried a story titled “PHONOGRAPH’S MUSIC HEARD ON RADIOPHONES: 400 Listen to Selections Transmitted by Local Inventor.” The article explains that Frank Conrad took his phonograph over to his wireless transmitter and played a selection of phonograph discs. Over time, the Saturday evening broadcast established an audience of 400 listeners, though we don’t know how the paper arrived at that figure.

Noted radio historian Donna Halper (2001) tells the story of 19 year old Eunice Randall Thompson, broadcasting over station 1XE at Tufts College beginning in 1919. Eunice may have been the first woman to be both an announcer and an engineer. She is remembered for many things, including reading radio children’s bed-time stories.

These are just a few examples of early broadcasts preserved for history by the popular radio magazines of the day. It was such a popular hobby that during the early days of radio there were at least 50 radio-related publications on the newsstand.

FAST FORWARD IN TIME

Commercial Interests Dominate

The next chapter of radio history began in earnest in the 1920s as commercial interests sought licenses for the specific purpose of capitalizing on the public’s fascination and dedication to radio broadcasts. It was not unusual, for example, for a furniture store to construct its own radio station. Why? To encourage the purchase of radio receivers. Major corporations like Sears saw the value

in owning their own station—WLS—World’s Largest Store. Nashville based WSM—whose slogan was We Shield Millions—was the radio voice of The National Life and Accident Insurance Company. Even the unions saw the value in a powerful radio voice. WCFL—The Voice of Labor—owned by the Chicago Federation of Labor went on the air in July 1926 and retained its ownership until it was sold in 1978.

Depressed Economy—Thriving Radio Audience

Next came the depression; ironically, economic hardship created an environment rich in possibilities for radio entertainment. Radio was “free”—at least once you purchased the receiving set and installed it. While World War II would place some severe restrictions on radio broadcasting, stations adapted and became the primary source for “instant” news with radio linking reporters around the globe. The same technologies allowed for stations to be effectively networked such that popular shows originating around the country could be heard across the entire nation. Radio shows were so popular that theaters would pause their feature films during the most popular radio shows and pipe in the radio channel to the delight of the movie going public. The picture show resumed after the radio show concluded.

Radio with Moving Pictures

New technology to rival radio—in the form of television—was technically viable prior to World War II, but until the war ended, all manufacturing resources were devoted to the war effort. Once television became available, radio, especially local radio, began a period of economic decline. Why just listen when you could listen and watch! Some declared radio “dead.” Not only radio suffered—so did movie theaters.

Rock and Roll to the Rescue/FM Underground/Talk Radio

What “saved” radio was rock and roll! (Douglas, 1999.) Throughout the 1950s, financially strapped station owners found that teenagers were gaining more and more spending power. They were also underserved as an audience. Rock and roll brought in listeners by the thousands with advertisement dollars to match. The trend continued well into the 1960s and even early 1970s, but the attraction of AM Top 40 stations waned. A new force was developing in the form of FM stations that played a greater variety of music. Some of them were considered to be underground stations; they not only presented alternative music but also espoused a counter-cultural message throughout their broadcasts. Of course they did this while quite willingly accepting traditional advertising. This time, it was a matter of FM with its superior sound quality and greater entertainment choices “killing” AM. But the AM dial was not about to become silent. Enter “talk radio.” While less than ideal for music, AM technology suits the human voice well and the talk radio format blossomed.

Each of these eras of broadcasting is worthy of its own expanded treatment. Please refer to the suggested readings at the end of this essay or browse the exhibit library for additional resources.

Meanwhile Back in the Small Towns

During this entire period, much of the original amateur/hobbyist spirit of highly localized community broadcasting continued quietly to develop. Many stations offered live music programs each day, often featuring a revered local pianist or organist. Listeners learned who had died and who had been born, who got married in the community and other social news. The “swap shop” became a favorite feature. Agricultural reports, hymn time, recipe shows, and a variety of other local fare dominated the schedule. Local Girl and Boy Scout troops and 4H members visited the studios and broadcast their hellos to family and friends. The whole sound generally wasn’t very polished but it was the familiar voice and ethos of the rural communities being served. A combination of the depression and World War II did restrict the number of start-up small community operations during the period, but by 1950, the situation changed drastically.

Even though television threatened to steal the radio audience, it would take some time before there was a critical mass of sets in the hands of viewers. Additionally, television stations were almost always associated with big cities, and their signals were, as often as not, either undetectable or extremely marginal in rural communities, especially in the Midwestern and Western states. Radio was still the key to local information.

Rural community radio continued to thrive well into the 1970s. An economic downturn and the increasing cost of doing business challenged small town broadcasters.

THE THREAT

By the 1970s there was a large and powerful movement against the restrictive rules that governed the use and content of radio (Hillyard & Keith, 2005). This dissatisfaction eventually led to the deregulation of the medium during Ronald Reagan’s presidency. Much of the call for deregulation came from large corporations with radio interests who were looking for ways to expand but were stymied by ownership rules. Deregulation changed how radio stations operated. For example, stations were no longer required to dedicate a certain percentage of their airtime to public affairs or non-entertainment programming. No longer were stations charged with ascertaining community needs within their broadcast territory, and the requirement for detailed program logs was eliminated. Additionally, the licensing process was made significantly easier, and caps on ownership were raised.

On August 4, 1987, Congress voted to abolish the Fairness Doctrine entirely—no longer requiring stations to provide “equal time” for opposing views. In March of 1992, the station ownership caps were again raised. Congress proposed the

complete elimination of ownership caps, and a significant relaxation of the cross-ownership rules that were then in place. Just a few years before the turn of the century, the Telecommunications Act of 1997 virtually eliminated any ownership caps that remained, and subsequently opened the floodgates for mass ownership of stations, with some companies owning hundreds or even a thousand or more stations.

The result of deregulation led to a more sinister effect than just large corporations buying up smaller operations. Prior to the onset of deregulation (e.g. Bates & Chambers, 1999; Chambers, 2001; Dawkins & Scott, 2003; Drushel, 1998), many rural communities enjoyed the presence of one or more locally owned and operated radio stations. The acquisition of rural stations for the purpose of repositioning them in larger markets began as soon as the FCC started to deregulate the market in 1981 (Bates & Chambers, 1999). Further deregulation, including the Telecommunications Act of 1997, has contributed to the phenomenon.

Specifically, the technique allowed access to larger markets, even though there were no available frequencies. For example, stations in the following markets were purchased for the purpose of serving the Springfield, Illinois metropolitan area [population 111,454 in 2000]: Hillsboro [population 4,349 in 2000], Lincoln [population 15,369 in 2000], Jacksonville [population 18,940 in 2000], Taylorville [population 11,427 in 2000], and Virden [population 3,488 in 2000]. The result was the loss of a local voice for listeners in the affected markets. In most cases, local studios were abandoned, transmitting facilities were relocated as close to the true intended market as possible, and the “new” station was marketed primarily as a service to the new, larger community. Overnight, smaller communities lost their local outlook. The new corporate owners cared little about serving their city of license. Rather, they concentrated on the audiences available to them in the nearby larger cities. (Grubbs, 2008.)

Broadcasting and Cable Magazine noted that in 1996, the top 25 station groups controlled just 7.3 percent of all stations. A mere four years later after the most recent rewrite of the Telecommunications Act stripped most caps on ownership, the top 25 groups controlled 23.4 percent (2,471 of 10,549) of all stations and 57 percent of all revenue, with a single entity, Clear Channel, accounting for 20 percent of that revenue and more than 1,000 stations (“Clearly,” 2000, p. 50).

The justification? Corporate America claimed they were “saving” small town radio—with some studies showing that more than half of the commercial radio stations—many in smaller markets—lost money in 1990. Consolidation allowed for economies of scale. The fixed costs could be spread among groups of stations.

The damage done during this period of consolidation is still felt very strongly today. But over time, big corporations learned that even with the efficiencies they offered, they could not realize a profit in some operations. There was also a significant backlash as more and more stations were effectively “stolen”

from their original communities. This created an opportunity for local interests to reclaim community stations by re-purchasing them. Creative engineering solutions and interpretations of Federal Communication Commission rules and regulations were also being applied to assist potential small market broadcasters and return ownership to local citizens.

SUCCESSFUL SMALL TOWN RADIO TODAY

Rising above the casualties of deregulation are a smaller but well-fortified group of stations that have found a way to survive. One small station owner says: “Small-market radio will survive only if it serves its listeners and its advertisers. It doesn’t mean being a jukebox—it means reading the news, the obituaries, doing the swap shops, the ball games, sponsoring the fish fries. You have to love radio to stay in it. There’s not a lot of money in it, even for ownership. You have to love it and the community.” (Randy Miller, Personal Communication.)

We often associate small town radio with country and gospel music, agricultural reports, and local news of a type that harkens back to the weekly newspapers of the nineteenth century that distributed the news of local births, deaths, marriages—an electronic form of town gossip rather than world caliber news coverage or the latest musical phenomena. But they provide far more. The best of the surviving small town radio stations offer us true community based programming—not just another iteration of big corporation radio. The political buzzword for this type of programming is broadcast localism. The FCC itself notes that radio stations “are licensed to local communities, and the Federal Communication Commission (FCC) has long required broadcasters to serve the needs and interests of the communities to which they are licensed. Congress has also required that the FCC assign broadcast stations to communities around the country to assure widespread service, and the Commission has given priority to affording local service as part of this requirement. Broadcast ‘localism’ encompasses these requirements.” (FCC, n.d., para 1)

THE KEY TO SUCCESSFUL SMALL TOWN RADIO

A study conducted from May 2006 through June 2007 (Grubbs, 2008) examined successful small town radio stations and identified some common elements of small town radio survivors:

- 1) In order to maintain a high level of local commitment, on-site involvement of ownership is critical.
- 2) Station involvement in community activities is paramount. Staff from the most successful stations are out in their communities every day. They don’t just participate in events planned by others; they provide leadership by creating community activities themselves. They are at the very fabric of their respective communities.

- 3) Longevity is a key element. Successful small town stations have a rich history in their communities. The “youngest” have been around for 15 years or more, while others proudly claim a 60 year or longer history of serving their communities.
- 4) The “bread and butter” for many small stations is local sports in the form of high school games, often supplemented by coverage of professional teams of local interest. It’s not just coverage of some local school sports that appears to make the difference. Rather, it’s a commitment to covering as many games as possible right down to Little League in some cases.
- 5) At least in agriculturally rich areas such as the Midwest, agri-business news remains an important force.
- 6) Successful stations make extraordinary efforts to hire extraordinary people that are a good fit with the local community. And they find a way to keep them motivated and loyal to the station. Modest incentives have been used to retain quality staff.
- 7) From a technical standpoint, engineering and legal advice can literally “save” a small market station. In short, the same techniques that benefit the big corporate owners when they seek ways to increase their presence in larger markets can be used by community broadcasters to their own advantage.

COMMUNITY RADIO

Another form of empowering radio comes in the form of the non-commercial “community station.” Generally licensed in the non-profit portion of the FM spectrum (88.1 to 91.9 MHz) these stations are often modestly powered and staffed entirely or mostly by community volunteers. Those wishing to learn more might examine the history of KDNA/KDHX in St. Louis, WEFT in Champaign Illinois, or WFHR in Bloomington, Indiana (e.g. Engleman, 1996; McCourt, 1999).

MODERN DAY AMATEUR RADIO ENTHUSIASTS

While regulation in the early twentieth century effectively ended community broadcasts by hobbyists, their interest and dedication has never gone away. These are the people who have pioneered many of the radio technologies we take for granted today. They helped establish FM as a viable form of communication; they created mobile phone connections that were the forerunner to today’s cell phones; they have contributed to satellite communication technology through a series of privately built and financed satellites (Davidoff, 1998). One set of experiments helped to define the protocol used for our GPS systems. And amateur enthusiasts created a wireless computer communication protocol long before most of us had any notion of a “wireless computer network.”

GAZE INTO THE CRYSTAL BALL

Radio is now a “legacy” technology. It’s been around for about 125 years. And while analog technology is giving way to digital means of transmission, there is no sign that radio as we know it is going away anytime soon. So what does the future hold for “free radio?”

In our lifetime, we will likely see the cessation of virtually all traditional analog radio, such as our current AM and FM bands. Just as the United States has committed to an entirely digital approach to broadcast television, the mandate to do the same for over the air radio is already in the works, but it’s a complicated issue—so was the change from analog to digital television.

When we think about the future of free radio, it’s important that we split the discussion into two distinct areas. Recall that radio waves are simply the carrier (or medium) that provide the means of transmitting information. Technologies will come and go; the technical nature of the carrier will shape the content—perhaps allowing higher resolution, multiple dimensions, and incorporation of other senses. An ideal carrier or medium would introduce no bias of its own—it would be completely transparent to the message—the ideas—ride along the carrier it provides. The message—the content—is anything we as humankind can imagine.

We continue to develop carriers that lend themselves to truly mass availability. But we still live in much smaller communities with an innate desire and need for localized information. Our challenge will be to create convenient and effective ways to continue to make that local information available. The connectedness of our world brings us the best art and entertainment available. We can travel, virtually, to the finest music halls, the best cinemas, the most interesting galleries, and the most vibrant street fairs. But for most of us, there is still something very unique and very desirable about making our own art and sharing that with our neighbors. Listening live and in person to musicians you know is a different experience than hearing the same or similar music from a distant source. Learning about “free radio” at the gallery is a different experience than reading about it online.

The future of “free radio” will be defined by people like you. You’ve started your journey by engaging in the *Free Radio* project. Our hope is that you use your experiences throughout your life to empower your own vision using the freedom and power of “free radio.”

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He writes:

"I'm still a DJ at heart! Throughout 50+ years of encountering and using technology, the constant theme in my life has been communication. In a career spanning radio broadcasting, telecommunication systems, and technical writing, it all ultimately brought me to UIS."

"Long before I got serious about higher education, I engaged in experiential and on-the-job learning that has become a vital part of my subject knowledge. At age 11, I earned my first Federal Communication license as amateur radio operator KN9EIV (now Extra Class K9EI). The following year I built (from component parts) my first digital computer, taking first place in my division at the St. Louis Science Fair. Circa 1966, I built my first version of "Free Radio" at my high school just outside Tokyo, Japan. My first real radio gig came during my senior year in high school co-hosting a show on Armed Forces Radio Japan. Upon returning stateside, I worked at a number of smaller stations in the St. Louis market earning recognition by *Billboard Magazine* as one of the top small market radio personalities in the country. In the 1980s, I helped to launch commercial station WNNS in Springfield, Illinois."

"My research interests include the history of radio, especially women in radio, the legacy of the Armed Forces Radio Service, and its later counterparts. I've also researched and published in the area of reality television as well as the pedagogy of online education. I am the 2009 recipient of the Burks Oakley II Distinguished Online Teaching Award at UIS and have done research for the National Association of Broadcasters on factors leading to success for small market radio stations. I have also authored a number of technical books including one for Radio Shack about digital radio technology. I've written hundreds of articles for computing and radio magazines."

"That's the brief story of my journey to this point in the space-time continuum. In the end, I started out as a kid who loves radio—and I'm still a kid—and my passion is still radio."

CHAPTER IV

Radio History Timeline

- 1898** First “wireless telegraph” newspaper message, relaying the results of a sailing competition, transmitted from a sea vessel to the newspaper *The Daily Express*.
- 1903** First radio news broadcast provided to sailing ships.
- 1906** Reginald Fessenden makes the first radio audio broadcast, from Brant Rock, Massachusetts. Ships at sea heard a broadcast that included Fessenden playing *O Holy Night* on the violin and reading a passage from the Bible.
- 1909** Marconi and Karl Ferdinand Braun were awarded the Nobel Prize in Physics for “contributions to the development of wireless telegraphy”.
- 1910** *The Wireless Ship Act* was passed by the United States Congress, requiring all ships of the U.S. traveling over 200 miles off the coast and carrying over 50 passengers to be equipped with wireless radio equipment with a range of 100 miles. The legislation was prompted by a shipping accident in 1909, where a single wireless operator saved the lives of 1200 people.
- 1912** *The London Convention* and the *Radio Act* both signed by President Taft, as well as the U.S. Congress’ ratification of the *1906 Berlin Convention*, reflect the U.S. government’s growing involvement in regulating the radio industry, including requiring licenses for most private radio transmitters and operators.
- The RMS *Titanic* sank. While in distress, it contacted several other ships via wireless. After this, wireless telegraphy using spark-gap transmitters quickly became universal on large ships. The *Radio Act* of 1912 required all seafaring vessels to maintain 24-hour radio watch and keep in contact with nearby ships and coastal radio stations.
- 1916** First regular broadcasts on 9XM (now WHA)—Wisconsin state weather, delivered in Morse Code.

- 1917-19** At the start of U.S. involvement in World War I, by executive order private radio stations are either shut down or taken over by the government. The overturn of these wartime restrictions coincide with the war's end.
- 1919** First clear transmission of human speech, (on 9XM) after experiments with voice (1918) and music (1917).
- 1920** E.W. Scripps's WWJ in Detroit received its commercial broadcasting license and started broadcasting. It has carried a regular schedule of programming to the present. Broadcasting was not yet supported by advertising. The stations owned by manufacturers and department stores were established to sell radios and those owned by newspapers to sell papers and express the opinions of the owners. WLS Chicago and WSM Nashville established similar programs.
- The first known radio news program was broadcast by station 8MK, the unlicensed predecessor of WWJ (AM) in Detroit, Michigan.
- Westinghouse in Pittsburgh, Pennsylvania became the first U.S. commercial broadcasting station to be licensed when it was granted call letters KDKA. (Their engineer Frank Conrad had been broadcasting from his own station since 1916).
- 1922** General Electric and Westinghouse's joint corporation, The Radio Corporation of America (RCA), purchases AT&T's national radio network to form the much more successful National Broadcasting Company (NBC).
- The British Broadcasting Company (BBC), the first national broadcasting organization, was formed for radio broadcasting by a group of British telecommunications companies. Its first broadcast from Marconi House in London occurred on November 14, 1922.
- 1927** Columbia Broadcasting System (CBS), a second national network, formed.
- 1928-29** Ten-minute "NewsCasts," created by *Time Magazine* working in conjunction with radio executive Fred Smith are broadcast by various stations nationwide.
- 1929** Dramatic re-creations of events, "NewsActing," incorporated into the "NewsCasts." This concept later expanded into a more lengthy program, "*March of Time*."

- 1933** Two-thirds of American households own at least one radio.
- President Roosevelt addresses the nation in the first of a series of "Fireside Chats" which occur sporadically throughout the following decade of FDR's terms in office.
- 1934** Federal Communications Commission established to oversee licensing, investigate monopoly charges, and set guidelines regarding obscenity, excessive advertising, and allocate radio wavelengths. Purportedly to improve the overall quality of radio reception, the FCC handed the most powerful and desired frequencies to broadcasters with the best equipment, resulting in the consolidation of much of the radio industry into a handful of large corporations.
- 1938** Orson Wells and the Mercury Theatre broadcast over CBS radio H.G. Wells' 1898 novel, *The War of the Worlds*. The broadcast was heard by 6,000,000 people, some of whom believed that the story of the invading Martians was real. To the extent that a large number of people were deceived, this may be one of the earliest examples of mass hysteria induced by electronic media.
- 1943** Tesla's patent (number 645576) was reinstated by the U.S. Supreme Court shortly after Tesla's death, because prior art existed before Marconi's patent was established. Ignoring Tesla's prior art, the decision may have let the U.S. government avoid paying damages that the Marconi Company was claiming for use of its patents during World War I; it is speculated that the U.S. government initially refused to grant Marconi the patent right, to nullify any claims Tesla had for compensation.
- 1939-45** Radio broadcast journalism establishes itself as a significant national media force as it covers the daily events of World War II.
- 1945** New York DJ Barry Gray discovers interviewing celebrities on air garner higher ratings than playing music alone. Gray is unofficially dubbed the "Father of Talk Radio."
- After World War II: The FM radio broadcast was introduced in Germany.

1964 Canadian educator, philosopher, and media theorist Marshall McLuhan proposed that media themselves, not the content they carry, should be the focus of study—popularly quoted as the “medium is the message”. In *Understanding Media: The Extensions of Man*, McLuhan’s insight was that a medium affects society, he states “...it plays a role not by the content delivered over the medium, but by the characteristics of the medium itself.” McLuhan pointed to the light bulb as a clear demonstration of this concept. A light bulb does not have content in the way that a newspaper has articles or a television has programs, yet it is a medium that has a social effect; that is, a light bulb enables people to create spaces during nighttime that would otherwise be enveloped by darkness. He describes the light bulb as a medium without any content. McLuhan states that “a light bulb creates an environment by its mere presence.” More controversially, he postulated that content had little effect on society—in other words, it did not matter if television broadcasts children’s shows or violent programming, to illustrate one example—the effect of television on society would be identical. He noted that all media have characteristics that engage the viewer in different ways; for instance, a passage in a book could be reread at will, but a movie had to be screened again in its entirety to study any individual part of it. It was a leading indicator of the upheaval of local cultures by increasingly globalized values. The book greatly influenced academics, writers, and social theorists.

1970 National Public Radio (NPR), a private, non-commercial network devoted to news, information, and “infotainment” founded. Programs are aired on local public radio stations nationwide.

CHAPTER V

Radio Technology Timeline

- 1820** Hans Christian Ørsted discovered the relationship between electricity and magnetism in a very simple experiment. He demonstrated that a wire carrying a current was able to deflect a magnetized compass needle.
- 1831** Michael Faraday began a series of experiments in which he discovered electromagnetic induction. The relation was mathematically modeled by Faraday's Law, which subsequently became one of the four Maxwell Equations. Faraday proposed that electromagnetic forces extended into the empty space around the conductor, but did not complete his work involving that proposal.
- 1885** Edison took out a patent on a system of radio communication between ships, which he then sold to Guglielmo Marconi.
- 1888** Heinrich Rudolf Hertz validated Maxwell's theory through experimentation. He demonstrated that radio radiation had all the properties of waves (now called Hertzian Waves), and discovered that the electromagnetic equations could be reformulated into a partial differential equation called the Wave Equation.
- 1893** In St. Louis, Missouri, Nikola Tesla gave a public demonstration of "wireless" radio communication. Addressing the Franklin Institute in Philadelphia and the National Electric Light Association, he described in detail the principles of radio communication. The apparatus that he used contained all the elements that were incorporated into radio systems before the development of the "oscillation valve", the early vacuum tube. Tesla was the first to apply the mechanism of electrical conduction to wireless practices. Also, he initially used sensitive electromagnetic receivers that were unlike the less responsive coherers later used by Marconi and other early experimenters. Afterwards, the principle of radio communication (sending signals through space to receivers) was publicized widely. Various scientists, inventors, and experimenters began to investigate wireless methods.

- 1894** Marconi builds his first radio equipment, a device that will ring a bell from 30 feet away.
- 1896** Marconi was awarded a patent for radio with British Patent 12039, *Improvements in Transmitting Electrical Impulses and Signals and in Apparatus There-for*. This is the initial patent for radio, though it used various earlier techniques of various other experimenters (primarily Tesla) and resembled the instrument demonstrated by others (including Popov). During this time spark-gap wireless telegraphy is widely researched.
- 1897** Marconi established the radio station on the Isle of Wight, England.
- 1898** Marconi opened the first radio factory on Hall Street, Chelmsford, England, employing around 50 people.
- 1899** Marconi establishes first radio link between England and France.
- 1873** James Maxwell, as a result of experiments, first described the theoretical basis of the propagation of electromagnetic waves in his paper to the Royal Society, *A Dynamical Theory of the Electromagnetic Field*.
- 1900** American scientist R.A. Fessenden transmits human speech via radio waves.
- 1901** Marconi transmits telegraphic radio messages from Cornwall to Newfoundland.
- 1903** Valdemar Poulsen patents an arc transmission that generates continuous radio waves, producing a frequency of 100 kHz and receivable over 150 miles.
- 1904** The U.S. Patent Office reversed its decision, awarding Marconi a patent for the invention of radio, possibly influenced by Marconi's financial backers in the States, who included Thomas Edison and Andrew Carnegie. This also allowed the U.S. government (among others) to avoid having to pay the royalties that were being claimed by Tesla for use of his patents.
- John Ambrose Fleming invented the two-element vacuum tube, or diode—an essential step in the development of radio, and later for electronic computing.
- 1905** Marconi invents the directional radio antenna.
- 1906** Lee de Forest introduced a third electrode called the grid into the vacuum tube. The resulting triode could be used both as an amplifier and a switch.
- First radio program of voice and music broadcast in the U.S. by R.A. Fessenden.
- 1907** Fessenden invents a high-frequency electric generator that produces radio waves with a frequency of 100 kHz.
- 1908** General Electric (GE) develops a 100 kHz, 2 kW alternator for radio communication.
- 1910** Radio communications gain publicity when the captain of the *U.S.S. Montrose* alerts Scotland via radio of an escaping criminal.
- 1913** The cascade-tuning radio receiver and the heterodyne receiver are introduced.
- 1914** Edwin Armstrong patents a radio receiver circuit with positive feedback. Part of the amplified high-frequency signal is fed back to the tuning circuit to enhance selectivity and sensitivity.
- 1918** Armstrong develops the super heterodyne radio receiver. The principle for this receiver is the basis for all radio receivers now in use.
- A 200 kW alternator starts operating at Station NFF, the Naval station in New Brunswick NJ, which was the most powerful radio transmitter of the time.
- 1919** Shortwave radio transmission and reception is developed.
- The Radio Corporation of America (RCA) is founded.
- 1920** KDKA broadcasts the first regular licensed radio broadcast out of Pittsburgh, PA.
- 1921** RCA starts operating the Radio Central Transmitting Station on Long Island. The American Radio Relay League establishes contact via shortwave radio with Paul Godley in Scotland, proving that shortwave radio can be used for long distance communication.

- 1928** A radio station in New York City, WRNY, begins to broadcast television shows.
- 1931** The University of Michigan School of Music pursues the idea of radio as education. School band lessons are taught via radio.
- 1933** Edward Armstrong patents wide-band frequency modulation (FM radio).
- 1935** FM radio is born, but only in mono.
- 1938** The Federal Communications Commission (FCC) sets aside educational/non-profit bandwidth on FM.
- 1941** Columbia University's Radio Club opens the first regularly scheduled FM station on October 10.
- 1945** Television is born. FM is moved from its original home of 42-50 MHz to 88-108 MHz to make room for TV.
- 1946** There are six TV stations in the nation.
- 1952** Sony offers a miniature transistor radio. This is one of the first mass-produced consumer AM/FM radios.
- 1954** The number of radio receivers in the world exceeds the number of newspapers printed daily.
- Regency introduced a pocket transistor radio, the TR-1, powered by a "standard 22.5V battery."
- 1960** Sony introduced their first transistorized radio, small enough to fit in a vest pocket, and able to be powered by a small battery. It was durable, because there were no tubes to burn out. Over the next twenty years, transistors displaced tubes almost completely except for very high power, or very high frequency, uses.
- 1960s** VHF Omnidirectional Range systems finally became widespread; before that, aircraft used commercial AM radio stations for navigation. (AM stations are still marked on U.S. aviation charts).
- 1961** FCC approves FM stereo broadcasting, which spurs FM development.
- 1962** U.S. radio stations begin broadcasting in stereophonic sound.
- 1963** Color television was commercially transmitted, and the first (radio) communication satellite, TELSTAR, was launched. In the late 1960s, the U.S. long-distance telephone network began to convert to a digital network, employing digital radios for many of its links.
- 1970** Norman Abramson at the University of Hawaii built ALOHAnet, the first wireless packet-switched data network, using packet radio. Unlike the ARPANET where each node could talk to a node on the other end, ALOHAnet used a shared medium for transmission and revealed the need for contention management schemes. ALOHAnet's situation was similar to issues that were later faced by Ethernet (non-switched) and Wi-Fi networks.
- 1970s** LORAN (LOnge RANge Navigation) became the premier radio navigation system. Soon after, the U.S. Navy experimented with satellite navigation.
- 1979** Andrew Economos founded Radio Computing Services (RCS). RCS's first product was Selector, a music scheduling system. The original Selector was developed on a PDP-11/03 under RT-11 and was programmed in Fortran and FMS-11. The goal of Selector is to help music directors of radio stations to handle day-to-day operations such as daily schedule generation, maintenance of music library and format hours.
- 1984** Amateur radio experimenters began to use personal computers with audio cards to process radio signals.
- 1986** In Europe, FM radio stations begin to use the subcarrier signal of FM radio to transmit digital data. This RDS (radio data system) is used to transmit messages on display screens to radios.
- 1987** The GPS constellation of satellites was launched.
- 1989** Brian Raila of GTE Laboratories recognized that a viewer or listener did not need to download the entirety of a program to view or listen to a portion of it, as long as the receiving device ("client computer") could, over time, receive and present data more rapidly than the user could digest the data. At the *InterTainment '89 Conference* held in New York City, Raila used the term "buffered media" to describe this concept. It became the basis for "webcasting."

- 1992** In Paris, an experimental digital FM transmitter begins operation.
- 1993** In the U. S., FM radio stations begin to use the RDS already in place in Europe.
- 1994** The first implantation of IP protocol over a wireless Internet network was demonstrated at Bell Labs.

The U.S. Army and DARPA (Defense Advanced Research Projects Agency) launched an aggressive successful project to construct a Software Radio that could become a different radio on the fly by changing software.

The first Internet Radio Cyberstation broadcast over the Internet at *NetWorld + Interop* in Las Vegas.

WXYC (89.3 FM Chapel Hill, NC) became the first traditional radio station to initiate broadcasting on the Internet. WXYC used an FM radio connected to a system at SunSite, later known as Ibiblio, running Cornell's CU-SeeMe software. WXYC had begun test broadcasts and bandwidth testing as early as August 1994.

- 2001** XM Radio having launched its two broadcast satellites "Rock" and "Roll" in the spring, initiated the first U.S. digital satellite radio service in Dallas/Ft. Worth and San Diego. Within two months, service extended across the United States.

CHAPTER VI

Transcriptions of Select Radio Broadcasts

The First Commercial Radio Broadcast, Pittsburgh November 2, 1920

This is KDKA, of the Westinghouse Manufacturing Company in East Pittsburgh, Pennsylvania. We shall now broadcast the election returns. We are receiving these returns with the cooperation and by special arrangement with the Pittsburgh *Post* and *Sun*. We would appreciate it if anyone hearing this broadcast would communicate with us as we are very anxious to know how far the broadcast is reaching and how it is being received. While we are waiting for the results to come in over the telephone, direct from the *Post* and *Sun*, I will give you the list of offices in today's presidential election. Here they are. Some 30 million Americans are electing a president of the United States, a vice-president, 34 for senators, 435 members of the house of representatives, governors of 34 states, dozens of minor offices, county judges and officials. Okay, those are the offices to be filled. And here are the seven complete presidential tickets that are being voted on, Republican, Warren G. Harding, Calvin Coolidge, Democratic, James M. Cox...

Gandhi, Speech at Victoria Hall, Geneva December 10, 1931

I regard myself as a soldier though a soldier of peace. I know the value of discipline and truth. I must ask you to believe me that I have never made a statement of this description, that the masses of India, if it became necessary would never resort to violence. I regard myself as incapable, in my lucid moments of making a statement of this character. It is complete independence that we want.

President Franklin Roosevelt: First Fireside chat March 12, 1933

I want to talk for a few minutes with the people of the United States about banking—with the comparatively few who understand the mechanics of banking but more particularly with the overwhelming majority who use banks for the making of deposits and the drawing of checks. I want to tell you what has been done in the last few days, why it was done, and what the next steps are going to be. I recognize that the many proclamations from State Capitols and from Washington, the legislation, the Treasury regulations, etc., couched for the most part in banking and legal terms should be explained for the benefit of the average citizen. I owe this in particular because of the fortitude and good temper with which everybody has accepted the inconvenience and hardships of the banking holiday. I know that when you understand what we in Washington have been about I shall continue to have your cooperation as fully as I have had your sympathy and help during the past week.

First of all let me state the simple fact that when you deposit money in a bank the bank does not put the money into a safe deposit vault. It invests your money in many different forms of credit-bonds, commercial paper, mortgages and many other kinds of loans. In other words,

the bank puts your money to work to keep the wheels of industry and of agriculture turning around. A comparatively small part of the money you put into the bank is kept in currency—an amount which in normal times is wholly sufficient to cover the cash needs of the average citizen. In other words the total amount of all the currency in the country is only a small fraction of the total deposits in all of the banks.

What, then, happened during the last few days of February and the first few days of March? Because of undermined confidence on the part of the public, there was a general rush by a large portion of our population to turn bank deposits into currency or gold. A rush so great that the soundest banks could not get enough currency to meet the demand. The reason for this was that on the spur of the moment it was, of course, impossible to sell perfectly sound assets of a bank and convert them into cash except at panic prices far below their real value.

By the afternoon of March 3 scarcely a bank in the country was open to do business. Proclamations temporarily closing them in whole or in part had been issued by the Governors in almost all the states.

It was then that I issued the proclamation providing for the nation-wide bank holiday, and this was the first step in the Government's reconstruction of our financial and economic fabric. The second step was the legislation promptly and patriotically passed by the Congress confirming my proclamation and broadening my powers so that it became possible in view of the requirement of time to intend [sic] the holiday and lift the ban of that holiday gradually. This law also gave authority to develop a program of rehabilitation of our banking facilities. I want to tell our citizens in every part of the Nation that the national Congress—Republicans and Democrats alike—showed by this action a devotion to public welfare and a realization of the emergency and the necessity for speed that it is difficult to match in our history.

The third stage has been the series of regulations permitting the banks to continue their functions to take care of the distribution of food and household necessities and the payment of payrolls.

This bank holiday, while resulting in many cases in great inconvenience is affording us the opportunity to supply the currency necessary to meet the situation. No sound bank is a dollar worse off than it was when it closed its doors last Monday. Neither is any bank which may turn out not to be in a position for immediate opening. The new law allows the twelve Federal Reserve banks to issue additional currency on good assets and thus the banks that reopen will be able to meet every legitimate call. The new currency is being sent out by the Bureau of Engraving and Printing in large volume to every part of the country. It is sound currency because it is backed by actual, good assets.

A question you will ask is this—why are all the banks not to be reopened at the same time? The answer is simple. Your Government does not intend that the history of the past few years shall be repeated. We do not want and will not have another epidemic of bank failures.

As a result we start tomorrow, Monday, with the opening of banks in the twelve Federal Reserve Bank cities—those banks which on first examination by the Treasury have already been found to be all right. This will be followed on Tuesday by the resumption of all their functions by banks already found to be sound in cities where there are recognized clearinghouses. That means about 250 cities of the United States.

On Wednesday and succeeding days banks in smaller places all through the country will resume business, subject, of course, to the Government's physical ability to complete its survey. It is necessary that the reopening of banks be extended over a period in order to permit the banks to make applications for necessary loans, to obtain currency needed to meet their requirements and to enable the Government to make common sense checkups.

Let me make it clear to you that if your bank does not open the first day you are by no means justified in believing that it will not open. A bank that opens on one of the subsequent days is in exactly the same status as the bank that opens tomorrow.

I know that many people are worrying about State banks not members of the Federal Reserve System. These banks can and will receive assistance from member banks and from the Reconstruction Finance Corporation. These state banks are following the same course as the national banks except that they get their licenses to resume business from the state authorities, and these authorities have been asked by the Secretary of the Treasury to permit their good banks to open up on the same schedule as the national banks. I am confident that the state banking departments will be as careful as the National Government in the policy relating to the opening of banks and will follow the same broad policy.

It is possible that when the banks resume a very few people who have not recovered from their fear may again begin withdrawals. Let me make it clear that the banks will take care of all needs—and it is my belief that hoarding during the past week has become an exceedingly unfashionable pastime. It needs no prophet to tell you that when the people find that they can get their money—that they can get it when they want it for all legitimate purposes—the phantom of fear will soon be laid. People will again be glad to have their money where it will be safely taken care of and where they can use it conveniently at any time. I can assure you that it is safer to keep your money in a reopened bank than under the mattress.

The success of our whole great national program depends, of course, upon the cooperation of the public—on its intelligent support and use of a reliable system.

Remember that the essential accomplishment of the new legislation is that it makes it possible for banks more readily to convert their assets into cash than was the case before. More liberal provision has been made for banks to borrow on these assets at the Reserve Banks and more liberal provision has also been made for issuing currency on the security of those good assets. This currency is not fiat currency. It is issued only on adequate security—and every good bank has an abundance of such security.

One more point before I close. There will be, of course, some banks unable to reopen without being reorganized. The new law allows the Government to assist in making these reorganizations quickly and effectively and even allows the Government to subscribe to at least a part of new capital which may be required.

I hope you can see from this elemental recital of what your government is doing that there is nothing complex, or radical in the process.

We had a bad banking situation. Some of our bankers had shown themselves either incompetent or dishonest in their handling of the people's funds. They had used the money entrusted to them in speculations and unwise loans. This was of course not true in the vast majority of our banks but it was true in enough of them to shock the people for a time into a sense of insecurity and to put them into a frame of mind where they did not differentiate, but seemed to assume that the acts of a comparative few had tainted them all. It was the Government's job to straighten out this situation and do it as quickly as possible—and the job is being performed.

I do not promise you that every bank will be reopened or that individual losses will not be suffered, but there will be no losses that possibly could be avoided; and there would have been more and greater losses had we continued to drift. I can even promise you salvation for some at least of the sorely pressed banks. We shall be engaged not merely in reopening sound banks but in the creation of sound banks through reorganization. It has been wonderful to me to catch the note of confidence from all over the country. I can never be sufficiently grateful to the

people for the loyal support they have given me in their acceptance of the judgment that has dictated our course, even though all of our processes may not have seemed clear to them.

After all there is an element in the readjustment of our financial system more important than currency, more important than gold, and that is the confidence of the people. Confidence and courage are the essentials of success in carrying out our plan. You people must have faith; you must not be stampeded by rumors or guesses. Let us unite in banishing fear. We have provided the machinery to restore our financial system; it is up to you to support and make it work.

It is your problem no less than it is mine. Together we cannot fail.

Excerpts from the Hindenburg Disaster
May 6, 1937

"...It's practically standing still now. They've dropped ropes out of the nose of the ship, and it's been taken a hold of down on the field by a number of men. It's starting to rain again; the rain had slacked up a little bit. The back motors of the ship are just holding it, just enough to keep it from ..."

"...It's burst into flames! Get out of the way! Get out of the way! Get this, Charlie! Get this, Charlie! It's fire and it's crashing! It's crashing terrible! Oh, my! Get out of the way, please! It's burning, bursting into flames and is falling on the mooring mast, and all the folks agree that this is terrible. This is the worst of the worst catastrophes in the world! Oh, it's crashing... oh, four or five hundred feet into the sky, and it's a terrific crash, ladies and gentlemen. There's smoke, and there's flames, now, and the frame is crashing to the ground, not quite to the mooring mast... Oh, the humanity, and all the passengers screaming around here!"

"I told you... I can't even talk to people... around there. It's—I can't talk, ladies and gentlemen. Honest, it's just laying there, a mass of smoking wreckage, and everybody can hardly breathe and talk... I, I'm sorry. Honest, I can hardly breathe. I'm going to step inside where I cannot see it. Charlie, that's terrible. I—Listen folks, I'm going to have to stop for a minute, because I've lost my voice... This is the worst thing I've ever witnessed..."

Winston Churchill
June 18, 1940

The news from France is very bad and I grieve for the gallant French people who have fallen into this misfortune. Nothing will alter our feeling towards them or our faith that the genius of France will rise again. What has happened in France makes no difference to British faith and purpose. We have become the sole champions now in arms to defend the world core. We shall do our best to be worthy of that high honor. We shall defend our island, and with the British Empire around us, we will fight on unconquerable until the curse of Hitler is lifted from the brow of men. We are sure that in the end all will be well. Though the fury and the might of the enemy must soon be turned on us Hitler knows that he will have to break us in this island or lose the war. If we can stand up to him all Europe may be free and the light of the world can move forward into broad sunlit uplands. But if we fail, then the whole world, including the United States, including all that we have known and cared for, will sink into the abyss of a new dark age made more sinister by the likes of perverted science. Let us therefore brace ourselves to our duty. So bare ourselves to our duty. If the British Empire and its commonwealths last for a thousand years, men will still say, this was their finest hour.

CHAPTER VII

Federal Communications Commission Regulations (FCC)

Title 47 of the Code of Federal Regulations. Part 15 (47 CFR 15)
<http://transition.fcc.gov/mb/audio/lowpwr.html>

UNLICENSED OPERATION

The next four sections cover the permitted forms of unlicensed operation in the AM band (535 to 1705 kHz) and FM band (88 to 108 MHz), and explain the penalties which may be assessed against those forms of unlicensed operation which do not fall within the permitted forms of unlicensed operation.

PART 15 DEVICES

Unlicensed operation on the AM and FM radio broadcast bands is permitted for some extremely low powered devices covered under Part 15 of the FCC's rules. On FM frequencies, these devices are limited to an effective service range of approximately 200 feet (61 meters). See 47 CFR (Code of Federal Regulations) Section 15.239, and the [July 24, 1991 Public Notice](#). On the AM broadcast band, these devices are limited to an effective service range of approximately 200 feet (61 meters). See 47 CFR Sections 15.207, 15.209, 15.219, and 15.221. These devices must accept any interference caused by any other operation, which may further limit the effective service range. For more information on Part 15 devices, please see [OET Bulletin No. 63 \(Understanding the FCC Regulations for Low-Power, Non-Licensed Transmitters\)](#). Questions not answered by this Bulletin can be directed to the FCC's Office of Engineering and Technology, Customer Service Branch, at the Columbia, Maryland office, phone (301) - 362 - 3000, [OET Laboratory Division help page](#).

CARRIER CURRENT or CAMPUS RADIO STATIONS

Carrier Current Stations, also referred to as Campus Radio Stations, **do not require a license** to set up and operate. In general, a carrier current station consists of an AM radiofrequency signal on a frequency between 535 and 1705 kHz being injected into a power line. The effective service range of a carrier current station is approximately 200 feet (61 meters) from the power line; however, a carrier current signal will not pass through a utility transformer. These stations are governed by 47 CFR Sections 15.207(c), 15.209(a), and 15.221 of the Commission's rules. For more information on Carrier Current Stations, please see [OET Bulletin No. 63 \(Understanding the FCC Regulations for Low-Power, Non-Licensed Transmitters\)](#). Questions not answered by this Bulletin can be directed to the FCC's Office of Engineering and Technology, Customer Service Branch, at the Columbia, Maryland office, phone (301) - 362 - 3000, [OET Laboratory Division help page](#).

PROHIBITED FORMS OF LOW POWER OPERATION

A license or a construction permit is required for forms of operation in the AM and FM radio broadcast bands which cannot be classified as [Part 15](#) or [Carrier Current Stations](#). This license or construction permit must be obtained from the Commission prior to construction of a broadcast station and before operations may commence. For more information on application filing requirements for licensed operation, see our [Information Sheet about How to Apply For A Broadcast Station](#).

PENALTIES FOR OPERATION WITHOUT A PERMIT OR LICENSE

The Commission considers unauthorized broadcast operation to be a serious matter. Presently, the maximum penalty for operating an unlicensed or "pirate" broadcast station (one which is not permitted under [Part 15](#) or is not a [Carrier Current Station](#)) is set at \$10,000 for a single violation or a single day of operation, up to a total maximum amount of \$75,000. Adjustments may be made upwards or downwards depending on the circumstances involved. Equipment used for an unauthorized operation may also be confiscated. There are also criminal penalties (fine and/or imprisonment) for "willfully and knowingly" operating a radio station without a license. **DON'T DO IT!** [Sample Enforcement Bureau orders for unlicensed operations.](#)

NOTE:

Free Radio is an educational resource and training project. No one involved with this production or the distribution of associated resources encourages anyone to do anything illegal. The end users are responsible for complying with all FCC rules & regulations within the U.S. or any regulations of their respective governing body. All end users act for themselves and not the members of *Free Radio*, CUE Art Foundation, or any associated individuals.

In the following sections, we describe the rules governing operation of a lawful broadcast station. If the station being applied for does not propose to operate in conformity with the FCC's rules, the appropriate construction permit or license application sent to the Commission must be accompanied by a request for waiver of the relevant rules. The waiver request will be evaluated by the staff and the applicant notified of the Commission's decision.

LOW POWER FM (LPFM) SERVICE (License Required)

In January 2000 FCC created a low power FM radio service. These stations are available to noncommercial educational entities and public safety /travellers information entities, but not individuals or commercial operations. A construction permit or license is required before construction or operation of an LPFM station can begin. Information on LPFM has been posted on the Audio Division's LPFM page at <http://www.fcc.gov/mb/audio/lpfm/index.html>, and that material is updated as required.

MINIMUM POWER LEVELS for LICENSED BROADCAST OPERATION

The minimum power for a standard FM broadcast station which a construction permit applicant may request is 100 watts (0.100 kilowatts). Alternatively, if an effective radiated power of less than 100 watts is sought, the combination of the proposed effective radiated power and antenna height above average terrain must cause the distance to the predicted 1 millivolt per meter (mV/m) contour (or 60 dBu contour) to be greater than 6 km. See 47 C.F.R. Section 73.211 of the Commission's Rules. Please note that new FM stations will not be authorized to operate with less than these minimums. While there are a few Class D FM noncommercial educational stations (also called "10 watt stations") which are permitted to continue operations with smaller facilities, authorizations for new Class D FM stations were discontinued in 1978. No new Class D FM stations will be authorized outside the state of Alaska. See our Information Sheet about [How To Apply For A Broadcast Station](#) for additional information on application preparation.

Stations authorized in the new LPFM service will operate with effective radiated powers (ERP) between 1 watt (0.001 kW) and 100 watts (0.100 kW). In any case, the distance to the 1 mV/m (60 dBu) contour from an LPFM station or application will not be permitted to exceed a reference distance of 5.6 km. LPFM applications which would require operation with less than 1 watt ERP will not be accepted for filing. The minimum power for an AM broadcast station which a construction permit applicant may request is 250 watts (0.250 kilowatts). Alternatively, if an effective radiated power of less than 250 watts is sought, an equivalent RMS value of at least 141 millivolts per meter (mV/m) at a distance of 1 km from the tower site must be proposed. See 47 CFR Section 73.21(a)(2) of the Commission's Rules. No AM broadcast station will be authorized with less than these minimums. See our Information Sheet about [How To Apply For A Broadcast Station](#) for additional information on application preparation.

TRAVELERS' INFORMATION STATIONS

Governmental entities, as well as park districts and authorities, may be eligible to operate a low power AM radio station for the purpose of disseminating information to travellers. A license is required before construction or operation of a Travelers' Information Station may commence. This service, which began in 1977 (see the June 20, 1997 [Report and Order](#)), is covered under rule Section 90.242 of the FCC's rules. Travelers' Information Stations on the AM band are limited to a 10 watt transmitter output power and the antenna height may not exceed 15 meters (49.2 feet). These stations may not transmit commercial information. This service is not available to individuals or groups, but only to governmental entities and park districts. See 47 CFR 90.242 and 47 CFR 90.20 (a). Application for an AM band Travelers' Information Station license may be made on FCC Form 601. The service is administered by the Public Safety and Homeland Security Bureau. For additional information on Travelers' Information Stations, please contact our Gettysburg, PA office at 1 - (888) - 225 - 5322, or by e-mail at FCCINFO@fcc.gov.

State and local governments may also create state-wide networks to provide non-commercial public safety information via radio using LPFM stations (see the [LPFM page](#)). Applications for this type of service must be filed on Form 318 during LPFM filing windows, and will be processed by the Audio Division, Media Bureau.

FREE SPEECH vs. RIGHT TO BROADCAST

A number of inquiries received at the Commission are from persons or groups who believe that there is a First Amendment, constitutionally protected right to broadcast. However, the Supreme Court of the United States has repeatedly ruled on this subject and concluded that no right to broadcast exists.

In *National Broadcasting Co. v. United States*, 319 U.S. 190 (1943), the Supreme Court stated, in pertinent part, as follows (footnotes omitted):

We come, finally, to an appeal to the First Amendment. The Regulations, even if valid in all other respects, must fall because they abridge, say the appellants, their right of free speech. If that be so, it would follow that every person whose application for a license to operate a station is denied by the Commission is thereby

denied his constitutional right of free speech. Freedom of utterance is abridged to many who wish to use the limited facilities of radio. Unlike other modes of expression, radio inherently is not available to all. That is its unique characteristic, and that is why, unlike other modes of expression, it is subject to government regulation. Because it cannot be used by all, some who wish to use it must be denied. . . . The right of free speech does not include, however, the right to use the facilities of radio without license. The licensing system established by Congress in the Communications Act was a proper exercise of its power over commerce. The standard it provided for licensing of stations was the 'public interest, convenience, and necessity.' Denial of a station license on that ground, if valid under the Act, is not a denial of free speech.

In addition, in *Red Lion Broadcasting Co., Inc. v. United States*, 395 U.S. 367, 89 S.Ct. 1794 (1969), the Supreme Court of the United States stated, in pertinent part, as follows (footnotes omitted):

When two people converse face to face, both should not speak at once if either is to be clearly understood. But the range of the human voice is so limited that there could be meaningful communications if half the people in the United States were talking and the other half listening. Just as clearly, half the people might publish and the other half read. But the reach of radio signals is incomparably greater than the range of the human voice and the problem of interference is a massive reality. The lack of know-how and equipment may keep many from the air; but only a tiny fraction of those with resources and intelligence can hope to communicate by radio at the same time if intelligible communication is to be had, even if the entire radio spectrum is used in the present state of commercially acceptable technology.

It was this fact, and the chaos which resulted from permitting anyone to use any frequency at whatever power level he wished, which made necessary the enactment of the Radio Act of 1927 and the Communications Act of 1934. *National Broadcasting Co. v. United States*, 319 U.S. 190, 210 - 214 (1943). It was this reality which at the very least necessitated first the division of the radio spectrum into portions reserved respectively for public broadcasting and for other important radio uses such as amateur operation, aircraft, police, defense, and navigation; and then the subdivision of each portion, and assignment of specific frequencies to individual users or groups of users. Beyond this, however, because the frequencies reserved for public broadcasting were limited in number, it was essential for the Government to tell some applicants that they could not broadcast at all because there was room for only a few.

Where there are substantially more individuals who want to broadcast than there are frequencies to allocate, it is idle to posit an unbridgeable First Amendment right to broadcast comparable to the right of every individual to speak, write, or publish. If 100 persons want to broadcast but there are only 10 frequencies to allocate, all of them may have the same 'right' to be a licensee; but if there is to be any effective communication by radio, only a few can be licensed and the rest must be barred from the airwaves. It would be strange if the First Amendment, aimed at protecting and furthering communications, prevented the Government from making radio communication possible by requiring licensees to broadcast and by limiting the number of licensees so as not to overcrowd the spectrum.

This has been the consistent view of the Court. Congress unquestionably has the power to grant and deny licenses and to eliminate existing stations. [citation omitted here]. No one has a first amendment right to a license or to monopolize a radio frequency; to deny a station license because 'the public interest' requires it 'is not a denial of free speech.' *National Broadcasting Co. v. United States*, 319 U.S. 190, 227 (1943).

"QUIET SPOTS" BETWEEN STATIONS ON THE DIAL

The fact that there are locations on a radio tuning dial which do not receive a broadcast station does not necessarily indicate that a station can be added on that frequency. A station's signal on the same frequency or an adjacent frequency which is too distant or weak to be picked up by a radio receiver can still cause interference to other broadcast stations. For this reason, the Commission's rules require that stations located very close in frequency be located in different communities separated by some physical distance, so as to limit any potential interference.

Before it can be determined whether any "quiet spot" could support a broadcast station, the interested individual or group would need to have an engineering study performed to determine whether the frequency can actually be used.

CHAPTER VIII

Radio History Case Studies

Case A: Pacifica Radio

Pacifica Radio

From Wikipedia, the free encyclopedia

http://en.wikipedia.org/wiki/Pacifica_Radio

Pacifica Radio Network	
Type	Public radio network
Country	United States
Availability	Worldwide
Founded	1946
Owner	Pacifica Foundation, Inc
Key people	Lewis Hill, founder Grace Aaron, interim executive director, Pacifica Foundation
Launch date	1949
Affiliation	WRN Broadcast
Official website	pacificafoundation.org

Pacifica Radio is the oldest public radio network in the United States.^{*[citation needed]*} It is a group of five independently operated, non-commercial, listener-supported radio stations that is known for its progressive/liberal^{*[1][2]*} political orientation. It is also a program service supplying over 100 affiliated stations with various programs, primarily news and public affairs.^{*[citation needed]*} The first public radio network in the United States, it is operated by the **Pacifica Foundation**, a non-profit corporation with national headquarters adjoining station KPFA in Berkeley, California. Programs such as *Democracy Now!* and *Free Speech Radio News* are some of its most popular productions.^{*[citation needed]*}

The Pacifica Radio Archives, housed at station KPFA in Los Angeles, is the nation's oldest public radio archive.^{*[citation needed]*} documenting more than five decades of grassroots political, cultural, and performing arts history. The archive includes original recordings of interviews with John Coltrane, James Baldwin, Lorraine Hansberry, and Langston Hughes, among many others.

The Pacifica Radio Archives feature in their own 30-minute slot on BBC Radio 5 Live's *Up All Night* programme, at 3.30am UK time on Mondays.

[edit]
History

[edit]
Early History

Pacifica was founded in 1946 by pacifist Lewis Hill. During World War II, Hill filed for conscientious objector status. After the war, Hill and a small group of ex-conscientious-objectors created the Pacifica Foundation. On-air broadcasting at KPFA in Berkeley, California commenced in 1949.

[edit]
Internal Conflict, 1990s-2002

For most of its history, Pacifica gave each of its stations independent control of programming. Then, during the 1990s, a major controversy arose over rumors that the Pacifica National Board and national staff were attempting to centralize control of content, in order to increase listenership. The rumors also included accusations that the board proposed changing the network's funding model away from reliance on listener donations and toward corporate foundation funding. There were also accusations that the Board was considering selling both KPFA in Berkeley, California and WBAI in New York City, which operate on commercial FM broadcast frequencies (94.1 and 99.5, respectively) worth hundreds of millions of dollars.

This led to years of conflict, including court cases, public demonstrations, firings and strikes of station staff, whose common plight inspired creation of Radio4all.net to preserve what they saw as the original spirit of Pacifica. Many listeners to the individual stations — especially KPFA and WBAI — objected to what they saw as an attempt to tone down the overtly left-leaning political content on Pacifica stations. The controversy included highly publicized disputes between listener organizations and Mary Frances Berry, a former chairwoman of the U.S. Commission on Civil Rights, who chaired the corporation's board at the time.

The board eventually was embroiled in counter lawsuits by board members and listener-sponsors, and after global settlement of the lawsuits in November 2001, an interim board was formed to craft new bylaws, which it did in two tumultuous years of national debates among thousands of listener-sponsors and activists, finally giving listener-sponsors the right and responsibility to elect new Local Station Boards at each of the five Pacifica stations. These local boards in turn elect the national board of directors. Aside from some minor changes, the same 2003 bylaws remain in effect today.

[edit]
Recent History, 2000s

Pacifica National News director Dan Coughlin was voted Interim Executive Director of the network in 2002 (the "Interim" was later dropped). But the years of internal legal battles and financial mismanagement had taken a toll. In 2005, Coughlin resigned, the network was still largely disorganized, and Pacifica reverted to operating with an interim executive director for most of the year.

In January 2006, Pacifica hired Greg Guma as the next executive director of the Pacifica Foundation. By the end of the year, it had fully recovered its financial health and had launched two new national programs: *Informativo Pacifica*, a daily Spanish Language newscast, and *From the Vault*, a weekly program drawn from Pacifica's extensive audio archives. Pacifica also produced *Informed Dissent*, a 10-week series for the 2006 mid-term elections that drew from talent across the network.

Guma left his post in September 2007.^[3] The National Board unanimously chose former KPFA General Manager Nicole Sawaya as the next Executive Director. Sawaya was among the staff members fired by the national board in 1999 amidst Pacifica's internal crisis. Sawaya began her tenure as Executive Director in mid-November 2007, but abruptly changed her mind two weeks later. Pacifica historian Matthew Lasar said she "found the level of interneccine dysfunction at Pacifica overwhelming, and fled her job." The Pacifica National Board spent the next several months negotiating with her, and Sawaya resumed her job on March 5, 2008. She resigned effective September 30,^[4] citing "dysfunctional" governance and "shoddy and opaque" business practices that had plunged the organization into a financial crisis.

Sawaya's departure was followed by major staff lay offs. In 2009 Pacifica Board Chair Grace Aaron became interim Executive Director, former Board Member LaVarn Williams replaced Lonnie Hicks as Chief Financial Officer, and the national office took control of WBAI-FM in New York. Aaron appointed Williams Acting GM of WBAI in May, and Hicks filed a lawsuit against the foundation alleging that he was dismissed because he is African American and a whistleblower.

[edit]
Recent Initiatives

- In 2007, the FCC announced that it would accept new applications for non-commercial radio licenses for the first time in more than a decade. In response, Pacifica joined forces with other advocates for independent media in the "Radio for People" campaign, helping local groups apply for these full-power licenses.
-
- Pacifica has expanded its schedule of national special broadcasts, distributing more audio documentaries, covering the Attorney General Alberto Gonzales hearings live, and sending production teams to the United States Social Forum and the National Conference for Media Reform.
-
- Pacifica expanded its offerings in multiple media platforms, using "Web 2.0" technology. In September 2007, one interactive website, KPFA's *Warcomeshome.org*, began to offer hard-hitting stories from reporter Aaron Glantz about the human costs of the Iraq War, as well as innovative ways of contributing to, and distributing information about, the impact of the conflict.
-
- Pacifica suspended regular programming for three days in order to air a live broadcast of the Iraq War Winter Soldier event in Silver Spring, Maryland from March 14 through March 16, 2008. The broadcast was co-anchored by journalist Aaron Glantz and KPFA Morning Show host Aimee Allison.^[5]

[edit]
Programs

A show which has for years been considered the flagship of Pacifica Radio's national programming is *Democracy Now!*, an independent talk show that covers democracy, human rights and justice issues, and questions the motives of U.S. foreign and domestic policy. Hosted by Amy Goodman and Juan González, this program is a compilation of news, interviews, and documentaries. *Democracy Now!* is heard and seen on more than 700 radio and TV stations across the U.S. including public-access television stations and satellite television channels *Free Speech TV* and *Link TV*.^{*citation needed*} WDEV, based in Waterbury, Vermont, is the only commercial radio station in the U.S. that carries the program.^[6]

In 2002, as Pacifica implemented its new listener-sponsor-accountability structure and as Pacifica and *Democracy Now!* settled outstanding disputes from previous years, *Democracy Now!* spun off with substantial funding from Pacifica to become an independent production.

The Pacifica network, in addition to extensive community-based productions at its various stations around the United States, also features a daily newscast *Free Speech Radio News*. *FSRN* is a radio program founded by Pacifica Reporters Against Censorship, a group of mostly *Pacifica Network News* reporters who went on strike against the Pacifica board policies of the late 1990s. *FSRN* is primarily funded by Pacifica, and includes headlines and news features produced by reporters based around the US and in scores of countries around the world. At a time when TV and radio networks are closing down bureaus and laying off reporters, the unique model pursued by FSRN makes it the most well-stocked show with about 100 reporters spread across the world.^{*citation needed*}

In 2006, Pacifica added two new national programs: *From the Vault* from the Pacifica Radio Archives, a weekly program that thematically repackages archival material, making it relevant to contemporary listeners; and *Informativo Pacifica*, based at KPFA in Los Angeles, a daily Spanish-language newscast that includes reporters from the US and many Latin American countries.

Local Pacifica stations also produce many programs that are available to network stations and affiliates. These include: *Sprouts*, a weekly showcase of producers and stations around the network, often in documentary format; *Explorations in Science* with Dr. Michio Kaku, a weekly radio program on science, politics, and the environment; *Dennis Bernstein's Flashpoints* a daily drive-time public affairs program; and many other regular programs.

Pacifica also produces a wide variety of special broadcasts, including live coverage of major US Congressional hearings, national mobilizations against war, and other important events, such as the United States Social Forum. Special programs also include news documentaries, holidays and commemorations, and archival audio from the Pacifica Radio Archives.

[edit]

Stations

Pacifica Radio Network		
Station	Dial Number	Location
KPFA	94.1 FM	Berkeley, California
KPFK	90.7 FM	Los Angeles, California
KPFT	90.1 FM	Houston, Texas
WBAI	99.5 FM	New York, New York
WPFW	89.3 FM	Washington D.C.

[edit]

Board of Directors

- Bonnie Simmons (KPFA)
- Joe Wanzala (KPFA)
- Sarv Randhawa (KPFA)
- Sherry Gendelman (KPFA)
- Jack VanAken (KPFK)
- Grace Aaron (KPFK)
- Margaret Prescod (KPFK)
- Yosh Yamanaka (KPFK)
- Dr. Evelyn Serwa (KPFT)
- Mike Martin (KPFT)
- Wendy Schroell (KPFT)
- George Reiter (KPFT)
- Carolyn Birden (WBAI)
- Nia Bediako (WBAI)
- Kathy Davis (WBAI)
- James Ross (WBAI)
- Acie Byrd (WPFW)
- Ambrose Lane (WPFW)
- Rob Robinson (WPFW)
- Thomas Ruffin (WPFW)
- Efia Nwangaza* (WMXP)
- Lori Taguma* (WOJB)

[edit]

See Also

- F.C.C. v. Pacifica Foundation
- List of Pacifica Radio Stations and Affiliates
- Radio4all.net

[edit]

References

- ↑ Lasar, Matthew (2000). *Pacifica Radio: Rise of an Alternative Media*. Temple University. pp. viii. ISBN 1-56639-777-4.
- ↑ "Progressive Radio". *TuneIN*.
- ↑ [1]
- ↑ [2]
- ↑ "Pacifica Radio to Broadcast the Historic Winter Soldier Gathering"
- ↑ http://www.wdevradio.com/index-progs.asp

[edit]

Further reading

- Lasar, Matthew, *Pacifica Radio: The Rise of an Alternative Network*, Temple University Press, April, 2000. ISBN 1-56639-777-4
- Lasar, Matthew, *Uneasy Listening: Pacifica Radio's Civil War*, Black Apollo, October, 2005. ISBN 1-900355-45-0
- Walker, Jesse, *Rebels on the Air: An Alternative History of Radio in America*, New York University Press, June, 2004

[edit]

External Links

- Pacifica.org
 - Pacifica Network stations and affiliates
 - Pacifica Radio Archives
 - Free Speech Radio News*
 - Radio for People
 - KPFA: A Historical Footnote (Seventy five hours of programs and interviews from the 1960s)
 - Unwelcome Guests **Download radio shows from radio4all**
- The Lengthening Shadow: Lewis Hill and the Origins of Listener-Sponsored Radio in America

Case B: KDNA Archives

s0536 KDNA/KDHX Radio (1971-), TAPES, 1965-1992 563 TAPES STATE HISTORICAL SOCIETY OF MISSOURI RESEARCH CENTER-ST. LOUIS UNIVERSITY OF MISSOURI-ST. LOUIS

This collection is stored off site. Please allow 3-5 business days for retrieval.

KDHX Station Manager Emeric Martin donated tapes stored in the basement of radio station KDHX's Magnolia Street building on June 5, 1992. The tapes may not be used for broadcast without permission from KDHX (see contract).

Founded by Jeremy Lanzman and Lorenzo Milam, KDNA-FM occupied FM 102.5 and served as an alternative community radio station in St. Louis in the late 1960s and early 1970s. The non-profit media corporation that founded the station, Double Helix, formally incorporated in St. Louis on August 12, 1971. Lanzman and Milam sold the station to KEZK-FM in June 1973.

The Double Helix corporation then began an eight year legal battle to gain control of the only remaining FM frequency available for high-powered broadcasting, 88.1 FM. Double Helix won legal claim to the frequency in 1981 (see collection 199). During the period after it left the air, the corporation remained viable by using CETA funds to develop production, programming, media workshops and job training. Double Helix also began developing programs for community television access, first pursuing a UHF station and later a cable channel, which was granted in 1983.

The radio and television branches of Double Helix grew separately, with television moving to a separate building on Euclid in 1983 (see collection 199). The radio operation shared a facility with the Central Regional Midwestern Education Laboratories (CEMREL) on Campbell and started building studio space. Owners of the building sold it, however, and the ensuing legal dispute led to a further delay in Double Helix's return to the radiowaves.

Double Helix resumed broadcasting on the 88.1 frequency on October 14, 1987 under the call letters KDHX.

SCOPE AND CONTENT The KDNA/KDHX Radio tapes, 1965-1992, include program materials used both on KDNA and its successor station, KDHX. The collections includes the surviving tapes from the KDNA archives, syndicated radio material supplied to both KDNA and KDHX, and some KDHX taped film reviews and network feeds.

The tapes primarily contain programming used by KDHX, some of its original local programming and some it taken from various radio feeds. The local programming includes welfare hearings, protests, public meetings, political conferences, interviews with local officials and performances by local musicians. It documents alternative lifestyles and public dissent in St. Louis during the 1960s and the history of community radio.

The collection also contains tapes of music by nationally known musicians such as Pete Seeger, Phil Ochs and Joni Mitchell, taped as feeds from early public radio networks like Pacifica. The KDNA/KDHX tapes also include many reels of ethnic folk music from around the world, used for KDNA programming. Tapes dating after 1973 and 1987 were collected as part of a network of local and regional community radio stations served by Double Helix, including one run by the St. Louis Board of Education.

SERIES DESCRIPTIONS The collection is divided into three series: 1. Chronological, 1965-1992; includes all tapes that have a chronological identification; 2. Alphabetical, nd; contains all undated tapes; 3. Cassettes, nd; six Deutschwelle cassettes, syndicated programs collected by KDHX.

BOX 1 (30499) Series 1 - Chronological, 1965-1992 1. Parkinson, "The Escape from Morality In Modern Literature," 8/17/65
2. Education of a Record Collector with Ed Mignon, August 13, 1966
3. Orchestras of Canada, 12/13/66
4-6. Rumanian Radio, 1967 (three reels)
7. Michael Scarborough, 7/31/67
8. Conspiracy, Chicago 8 Documentary, 1968
9. NBC News, 1968
10. Prague Spring Festival, 1968
11. Prague Spring Festival, 1968
12. Joni Mitchell, Club 47, 1/10/68
13. Commentary: Dave Harris, Draft Refuser, speech at Reed College Resistance meeting dealing with non-violent revolution that wins over the police and army, 7/20/68
14, 15. NHK, 1969 (second and third reels)
16. 18th World War Games In Borders of North India and Pakistan, 6/16/69
17. David Felix on Vietnam, from Washington University Conference, 11/14/69
18. Sadhu Grewal Interview, 10/19/69
19. Pete Seeger, New York University, benefit concert for the South Street Seaport Museum, 11/7/69
20, 21. NHK, 1970 (two reels)
22. Documentary on Metropolitan Towing, 1/13/70
23. Music of Egypt, 2/7/70
24. The Boyer Family talking about the Fox Hollow (NY) Festival with John Rolo, 7/12/70
25. Herbert St. Charles, 4/20/70
26. Stella Elam, Banjo and Fiddle, 8/31/70
27. Herbert St. Charles, 9/14/70
28. St. Louis Hearings For The United Nations, 10/12/70
29. Heidi Barton, 11/8/70

BOX 2 (30500) 30. The Associated Students of Oregon Present Racism #1, taped at the University of Oregon, has John Trudell, Charles Evers, David Sanchez, Kent Ford, Frank Martinez, Bob Borjoras, Dennis Baker and Ellen Bepp; features and exchange between Charles Evers and Kent Ford about a National Liberation Front, 10/70
31. The Associated Students of Oregon Presents Racism #6, 10/70
32. Herbert St. Charles, 12/14/70
33. Russell Johnson, AFSC, on Vietnam and Southeast Asia, 12/28/70
34. Winter Soldier, from WABX Detroit, interviews with those who are organizing the Winter Soldier Hearings, 1/28/71
35. Concerned Black Workers #1. A black group that has shut down the big GM complex at Natural Bridge and Union, 3/31/71
36. Jeff Cooke and the Grass Cutters, 5/27/71
37. Herbert St. Charles, 10/15/71
38. News, Wilma Chestnut, 11/71
39. Herbert St. Charles, 3/8/71
40. Black Panther New Haven Trial, 3/19/71
41. Heidi Barton, 3/22/71
42. Marathon, 4/71
43. Selections from Japanese Popular Songs, 4/1/71
44. The War and the Economy, 5/17/71
45. Dekowen Programs, 5/19/71
46. Winter Soldier Investigation, 5/17/71
47. Interview with Douglas Glasgou, Dean of Howard University School of Social Work and an outspoken participant in the National Association of Social Workers Convention in St. Louis, late in April, 1971
48. Judy Gumbo and Colin Nieberger Speak about Grand Juries, 8/20/71
49. Japanese Flute Music, 8/31/71
50, 51. Bibliography in Sound, 9/2/71 (two reels)
52. Sounds of the Strike, 9/5/71
53. Demonstration by the American Frieds Services Committee at a Republican \$500 a plate dinner, 10/71
54. Students Struggle for Soviet Jury, 10/7/71
55. Michael Cohen, Dulcimer, 10/8/71
56. A Black Muslim from Angela Davis Rally, 11/15/71
57. Interview with Bill Rainbow, who buried Plymouth Rock on Thanksgiving, 11/24/71
58. The Anatomy of a Riot, 12/1/71
59. The Christensons, 12/21/71
60. Doming East St. Louis, A Conversation with Jim Fitzgibbon, a

Washington University architect and Buckminster Fuller co-hort, about the plan to redevelop East St. Louis under a dome, 1/3/72
61. Welfare Hearing, 1/6/72

BOX 3 (30501) 62. Welfare Hearing, 1/6/72
63. United Front Choir, 2/26/72
64. The Impotent Poor, a series of "On The Street" interviews with some people who were being fed the free meal of the week in the Gaslight Square neighborhood of St. Louis, 3/72
65. Patrick Sky, Jack Elliot and Judy Roderick, 3/11/72
66. Voice of Americanism, 3/10/72
67. Peter Spencer, Guitar and Vocal, 4/1/72
68. Health Care In St. Louis City Jail and Workhouse, 4/8/72
69. Music of Rumania, 4/11/72
70. Michael Cohen, dulcimer, 5/3/72
71. Crestview Record, 5/9/72
72. Turkish Saz and Singers, 6/7/72
73. Patterson, vocal and guitar, 4/19/73
74. Staff Meeting, Policy Discussions About Open Access To Organizations, 5/19/72
75. Voice of Americanism, 5/23/72
76. Alternatives: Astrology, 6/30/72
77. Music of the Farm Workers: Rose-Redwood, Early Fall, 1992
78. Thiele Interview, 7/10/72
79. Democratic National Convention, 7/10/72
80. Democratic National Convention, 7/11/72
81, 82. Japan: Koto Music, 8/24/72 (two reels)
83. The Bombing of the Dikes, 8/13/72
84. The Recorder Consort of Alton, 9/7/72
85. Lead Poisoning Press Conference, 10/3/72
86, 87. Indian Hour, Live Sitar and Tabla, 10/9/72 (two reels)
88. Phil Ochs at Wittenberg University, Ohio, was singing for a George McGovern Fund-Raising benefit, 10/30/72
89, 90. Winter Soldier, 11/1/72 (two reels)
91. Yugoslavian Folk Music, 11/24/72
92. Hancock's Half Hour, Tony Hancock was a popular British radio and TV comedian who hung himself in the late 60s, 11/25/72
93. Herbert St. Charles, 12/6/72
94. Larry Groce and Rick Larson, Principia College, Elsah, IL, 1/2/73
95. Vance Sorrells, 1/6/73
96. Consulting the Romans, 1/9/73

BOX 4 (30502) 97. Contemporary Music, Concert 1, 1/73
98. Contemporary Music, Concert 2, 1/3/73
99. Contemporary Music, Concert 3, 1/10/73
100. Contemporary Music, Concert 4, 1/73
101. Contemporary Music, Concert 5, 1/73
102, 103. David Berry, The Candid Cop, St. Louis Seventh District Patrolman Gives Candid Thoughts and Answers To In Studio People and Phone Calls, 1/16/73 (two reels)
104. Dub Crouch, Blue Grass, 1/27/73
105. CATV In St. Louis, From a live broadcast of citizens hearing on cable television, 4/73
106. CATV and Its Implications for St. Louis, Sponsored by the St. Louis Arts and Education Council, an informative talk by Mike Holland from the CATV Information Center and Milton Svetanics, St. Louis alderman who has introduced a bill to revoke current CATV franchise in St. Louis, 6/7/73
107. Voice of Americanism, 4/16/73
108. East Side Scene, three interviews dealing with the changing political structure in East St. Louis: 1. U. S. Food Stamp Center 2. Herman's School of Beauty and Cosmetics 3. Curtis Thomas: Educational Structure at SIU-Edwardsville and SCC in East St. Louis, 1/19/73
109. Collapse of the American Economy and Alternate Currencies, Paul Salstrom, 2/23/73
110. Voice of Americanism, 3/23/73
111. CATV in St. Louis, 4/73
112. Report on Wounded Knee, 4/13/73
113. Peeko-Viewers PSA, 4/3/73
114. From the Live Music Marathon for Therapy Consultants, John Shewmaker giving a funds plea, Ed Mcreary, guitar and voice, Spring 1973
115. River Styx and Human Arts Ensemble, Michael Castro, Robert Ferguson, Danny Spell, Spring 1973
116. Dave McKenzie, Slide Guitar Blues, 2/9/79
117. Are You Worried About Your Image, Mr. President?, 6/1/73

118. Union Democracy, Panel Discussion, Sponsored by the St. Louis Chapter of the National Lawyers Guild, 6/2/73
119. Two Short Conversations with kids (Gia, Tony and Mike) who talk about drugs and babies, Jews, Indians and Italians, 6/5/73
120. Live Day: Woman's Vocal, Andy Cohen; Tom Alpha and Paul Omega with Slide Guitar and Flute, 6/8/73
121. Bob McReary Talking, Andy Cohen, 6/8/73
122. Japan-Gagaku, 6/8/73
123. New York Telephone and Wiretapping, 6/9/73
124. Richard M. Helley, 9/16/73
125. Voice of Americanism, 12/24/73
126. Voice of Americanism, 4/9/74
127. Test Tape, Gail and Music BKG Reading Gov's Agenda, 9/8/75
128. Feirouz, Pakistani Music, 2/15/76
129. Day Hospital at Lutheran Medical Center, Tom Burnes, Social Psychological, Lutheran
130. Day Hospital Talks About Mental Health, 7/2/76

BOX 5 (30508) 131. Across The Atlantic, 3/29/76
132. Focal Point Benefit #2, 12/2/76
133. Focal Point Benefit #3, 12/2/76
134. Focal Point Benefit #5, 12/2/76
135. Conway Campaign, 1977
136. Lehman, Code Machine, 2/3/77
137. Japanese Press Review, 4/6/77
138. Childgrove, 3/10/80
139. Childgrove, Child Dancers Interviews, 5/20/80
140. Big Al Mothershead, "Hot Jazz," 1/24/81
141. Big Al Mothershead, "Hot Jazz," 2/7/81
142. Tellin' It Like It Was, 3/9/81
143. Comedy, 3/23/81
144. Dunno What's On This One, 4/6/81
145. Women's International League of Peace and Freedom, 4/25/82
146. GRT Master Shake Down, 7/19/82
147. GRT Master Help Cervix, 8/23/82
148. Aircheck, 12/7/82
149. Bill Thomas and Mimi Rivera, 2/24/83
150. Dora Maria Tellez, October 1986
151-153. European Profile, 1987 (three reels)
154. Israel Broadcasting Service, 1/26/87
155. Israel Broadcasting Service, 11/24/87
156-167. European Profile, 1988 (twelve reels)

BOX 6 (30748) 168-174. European Profile, 1988 (seven reels)
175-181. Topics From Holland, 1988 (six reels)
182. Women and Disarmament, 1988
183. Israel Broadcasting Service, 4/19/88
184. Israel Broadcasting Service, 5/3/88
185. Israel Broadcasting Service, 7/26/88
186. Israel Broadcasting Service, 10/11/88
187. Topics From Holland, 1988
188. Arts Monthly, 12/88
189. Israel Broadcasting Service, 12/20/88
190. Hidden Agenda, Life and Nothing But, 1989
191-202. European Profile, 1989 (twelve reels)
203. Minimum Wage, Maximum Controversy, 1989
204. Topics From Holland, 1989 (four reels)
205. Arts Monthly, 1/89
206. Sweden Today, 1/89
207. Israel Magazine, 1/3/89
208. Israel Magazine, 1/10/89
209. Israel Magazine, 1/17/89

BOX 7 (30749) 210. Israel Magazine, 1/24/89
211. Israel Magazine, 1/31/89
212. Arts Monthly, 2/89
213. Israel Magazine, 2/21/89
214. Sweden Today, 2/89
215. Arts Monthly, 3/89
216. Across The Atlantic, 5/89
217. From Ticker Tape and Telephone, Asian and Pacific Edition, 5/89
218. From Ticker Tape and Telephone, African and Caribbean Edition, 5/89
219. Across The Atlantic, 9/89
220. From Ticker Tape and Telephone, Asian and Pacific Edition, 10/89
221. From Ticker Tape and Telephone, African and Pacific Edition, 10/89
222. From Ticker Tape and Telephone, Asian and Pacific Edition, 11/89
223. Israel Press Review, 12/27/89
224. Census, 1990
225-230. European Profile, 1990 (five reels)
231. Psych Talk Promos, 1990
232. Israel Press Review, 1/24/90
233. Israel Press Review, 2/14/90

234. Ticker Tape and Telephone, African and Caribbean Edition, 4/90
235. Israel Press Review, 6/19/90
236. Israel Press Review, 7/5/90
237. Israel Press Review, 7/11/90
238. Israel Press Review, 7/18/90

BOX 8 (30764) 239. Israel Press Review, 8/15/90
240. Israel Press Review, 8/22/90
241. Israel Press Review, 9/5/90
242. Israel Press Review, 9/19/90
243. The American Theatre, 10/9/90
244. The Sounds of Israel, 10/14-21/92
245. Footnotes from the Holy Land, 10-11/90
246. Comprehensive Test Ban Treaty Radio Spots, 11/7/90
247. Israel Press Review, 11/7/90
248. Screentest Commercials, 11/12/90
249. Israel Press Review, 11/20/90
250. Israel Press Review, 12/18/90
251, 252. EuroQuest, 1991 (two reels)
253-257. Media Network II, 1991 (three reels)
258. News and Sports, 1991
259. The Shortest War by Chimera, 1991
260, 261. Wondrous World, 1991 (two reels)
262. Alan King, 2/18/91
263. Arts Monthly, 6/91
264. Voicer, 10/91
265. Social Security, 11/30/92
Series 2 - Alphabetical
266. Access 30
267. Access 30, National Alliance Against Racism
268. Across The Atlantic, 8/52
269. Afghanistan Music (three reels)
270. Aircheck
271. Alliance Against Racism and Political Repression
272. Alpert, Herb
273-281. American Jewish Committee (nine reels)

BOX 9 (30772) 282-295. American Jewish Committee (fourteen reels)
296. American Songs by Larry Hanks
297. Anthology of Rumanian Folk Music
298. Azerbaijani Folk Songs
299. Big River #5: Alina Rivero; Arthur Brown; John Durham
300. Big River #6: Durham; Jibari; Rick Safran; Burns
301. Big River #7: Burns; Shirley Leflore; J. D. Parran
302. Big River #8: Shirley Leflore; J. D. Parran; Marty Ehrlich; Keith Mason; Ehrlich/Parran
303. Big River #9: Michael Castro; Allen Suites
304. Bluegrass (Bill Monroe; Earl Scruggs)
305. Bolero
306. Boogie Music
307. Boyer Family
308. Broadcast Coalition: Uncensored Views of the Coalition about Reagan Administration policy on USA involvement in El Salvador
309. Business of Death
310. Calloway, Ernest
311. CB Epic
312. Children, Ani Ma Amin, Gloria (Paulene)
313, 314. Children of God (two reels)
315. Children's Program
316. Christenson Family

BOX 10 (30785) 317. Coalition Against Racism and Oppression
318. Mike Cohen Live
319. Conway for Mayor Campaign
320. Conway #1, Loretta Johnson
321. Conway #6
322. Stephen Deutsch
323. Discussion of a Group Marriage
324. Ear Training
325. Ear Training
326. Education of a Record Collector
327. Virgil Elliot and Grant Bruxton, vocal and guitar
328. European Profile
329-342. Film Reviews from Diane Carson (fourteen reels)
343. German Choral Music
344. Grateful Dead/Phil Lesh commercial
345. Senator Mike Gravel speech
346. Hancock's Half-Hour
347. Interview with Hephzibah Menuhin Hauser
348. Housing Anytime
349. Freddie Hubbard
350-355. Indian Music (six reels)
356. Indonesian Music

BOX 11 (30794) 357-359. Iranian Music (three reels)
360-364. Israel Broadcasting Service, Footnotes from the Holy Land (five reels)
365. Interview with Devica Jain
365-394. Japanese Music (thirty reels)

BOX 12 (30795) 395. Javanese Gamelan
396. Johnston, Gene
397. Keats compositions
398. The King, the Mice and the Cheese
399. Kofsky Interview
400-407. Korea: Court and Secular Music (eight reels)
408. Kozman, Myron
409. Krishna Live Day
410. Kundalini Yoga
411. Labor News and Views
412. Leviathan
413. Maharaj-ji
414. Mantra, kirtan, chanting, religions
415. Master Jesus Group
416. McReynolds, David
417. Media Network II
418. Meditation: Krishnamurti
419. Methadone Program Participant Interview
420. Miscellaneous News
421. Luther Mitchell: coalition Against War, Racism and Repression
422, 423. Montage of Montages (two reels)
424. Mother Earth News
425-429. Music of Egypt (five reels)
430. Music of Iran
431. Music of Kashmir
432. Music of Morocco
433. Music of Mozambique: Chopi Tribe (two reels)

BOX 13 (30796) 434. Music of Nigeria
435. Music of Occidental Africa: Mali
436, 437. Music of Okinawa (two reels)
438, 439. Music of Pakistan (two reels)
440-457. New Party Convention (eighteen reels)
458-460. New Zealand Broadcasting Corporation (three reels)
461. Newscast (before German re-unification; after Ollie North)
462. Nicaragua Interview
463. Nuclear Power
464. On The Wall Productions Mural Show
465. Opera
466. "Operation Exodus" Jewish Federation
467. Anthony Outgas #4

BOX 14 (30797) 468. Oscar Peterson Plays The Duke Ellington
469. Piano Tandberg
470. Police Recruiting
471. Population Ecologist Alan Beck
472. PSA-TV Conference
473. Prokofiev - Violin Concerto
474. Psych Talk Promos
475. Radio Moscow, Discussion of Art
476. Religions Montage IX
477. Road Apples
478-482. Ryoku Islands Music (five reels)
483. Oliver Sain at Mississippi Nights
484. St. Louis Magnet Schools
485. St. Louis Police Recruiting, "Be A Man," A Talk to UMSL to recruit boys for the academy

INDEX Alliance Against Racism and Political Oppression, t. 271 American Friends Service Committee, t. 53 Astrology, t. 76 Black Muslims, t. 56 Black Panthers, t. 40 Boyer Family, t. 24, 307 Cable Television, t. 105, 106, 111 Chicago 8, t. 8 Conway, Jim, t. 135, 319-321 Davis, Angela, t. 56 Democratic National Convention, 1972, t. 79, 80 Double Helix, t. 1-556, esp. 495 Draft Resistance, t. 13 East St. Louis, t. 60, 108 Elliot, Jack, t. 65 Ethnic Music, t. 23, 69, 72, 81, 82, 86, 87, 91, 122, 128, 269, 297, 298, 350-359, 365-394, 400-407, 425-439, 488, 512-515, 520-521, 556 Farm Workers, t. 77 Focal Point, t. 132-134 Fuller, R. Buckminster, t. 60 Gaslight Square, t. 64 Grand Juries, t. 48 Grateful Dead, t. 344 Gravel, Michael, t. 345 Group Marriage, t. 323 Israel, t. 154, 155, 183-186, 189, 213, 223, 232, 233, 235-242, 244, 245, 247, 249, 250, 360-364 KDXH, t. 1-563 KDNA, t. 1-563 Krishnamurti, t. 418 Maharaj-ji, t. 413 McCreary, Ed, t. 115 Methadone Program, t. 419 Minimum Wage, t. 203 Mitchell, Joni, t. 12 New Party Convention, t. 440-457 Nuclear Power, t. 363 Ochs, Phil, t. 88 Radio, t. 1-563 Republicans, t. 53 Riots, t. 58 River Styx, t. 115, 299-303 Road Apples, t. 477 Sain, Oliver, t. 483 Seeger, Pete, t. 487 Shewmaker, John, t. 114 Sky, Patrick, t. 65 Social Security, t. 265 Social Workers, t. 47 Soviet Jewry, t. 54 Soviet-American Relations, t. 490-493 St. Louis City Jail, t. 68 St. Louis Police, t. 102, 103 St. Louis Police, t. 485, 486 Strikes, t. 52 The American Theatre, t. 243 Trudell, John, t. 30 United Front, t. 63 United Nations, t. 28, 497 Vietnam, t. 33, 34, 46, 89, 90, 519-522, 527, 528, 531-541 Welfare Hearing, t. 61 Wiretapping, t. 123 Women's International League of Peace and Freedom, t. 145, 542 World Environment Day, t. 546 Wounded Knee, t. 112 Yoga Center, t. 555

486. St. Louis Police Recruiting, Police and Marijuana
487. Pete Seeger, Strangers and Cousins
488. The Silver Strings, A Yugoslavian String Band from Hamilton, Canada
489. Darryl Skabak and Bill Nygrin, Draft Refusers Discuss Their Time in Prison, followed by questions from the audience, Reed College
490-492. Soviet-American Relations (three reels)
493. Soviet Press Review
494. Spiritual Alternatives (15 one minute programs on one reel)
495. Staff Meeting of the Great By-Laws; staff meeting where the board of directors, the association and some of the by-laws were voted in (Double Helix first meeting) (two reels)
496. The Staple Incident; Two Transcendental Experiences
497-503. Stockhausen (seven reels)
504. Isaac Stern, UN Day Concert

BOX 15 (30868) 505. Stress and Subsequent Illness
506. String Quartet #1 Bartok
507. Sweden Today
508, 509. Swedish Spectrum (two reels)
510. Switched-On Bach
511. Thiele Interview
512-515. Tibetan Buddhist Music (four reels)
516, 517. Ticker, Tape and Telephone, African and Caribbean Edition (two reels)
518. Transformer Zone
519. TTT Special, 28th Import Fair Berlin
520-521. Turkey, Instrumental Music (three reels)
522. Unidentified Classical Music
523. Unidentified News Program
524. Twain's War Prayer
525. United Front
526-527. Vistas of Israel (three reels)
528. Vietnam Veterans, Writings by
529. Vietnamese Folk Singer, Nho Trinh Cong Boh
530, 531. Vietnamese Music (two reels)
532. Voice of Americanism
533. Waste Not
534. Welfare Mothers
535. WEW Pilot
536, 537. Winter Soldier Investigation (two reels)

BOX 16 (30877) 538-548. Winter Soldier Investigation (eleven reels)
549. Women's International League for Peace and Freedom
550. Women's Political Caucus
551. Wondrous World
552. Works by Soviet Composers
553. World Environment Day
554. World Tomorrow
555. Yoga Center
556. Yugoslavian Music
557. Dr. Zhivago
Series 3 - Cassettes
558. The Federal Republic of Germany Turns Forty
559. Hits in Germany
560. The Iron Boy
561. Lucy in the earth
562. A Short History of the Postal System (three cassettes)
563. Unidentified cassette

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CHAPTER IX

FM Radio Transmitter Assembly/Operation Reference

The following is a reference that will enable individuals to better identify the various components of an FM Transmitter, what function each serves, how they work in concert, and how they get used for a transmission. All of these parts are easy to access, relatively affordable, and, if an individual has a good deal of experience building circuitry, they can even be made from scratch out of things found at RadioShack and other such electronics vendors. See Appendix iii. for an example of a homemade Phase Lock Loop (PLL) circuit made from a kit purchased from Berkeley Free Radio.

FM Radio Transmitter Assembly/Operation Reference

1. Find an open frequency. The Web has some great frequency locator sites, such as:
radio-locator.com

2. Assemble the following parts:

A. LINE INPUT: AUDIO SIGNAL

THIS IS THE SOURCE OF SOUND THAT WILL BE BROADCAST OVER THE AIRWAVES. THIS SOURCE MAY BE IN THE FORM OF A MICROPHONE FOR LIVE VOICE RECORDING, A CD PLAYER IF PRECORDED MUSIC IS BEING PLAYED, OR A COMPUTER. IF MULTIPLE FORMS ARE BEING BROADCAST, SUCH AS A DJ'S VOICE INTRODUCING MUSIC FROM A CD, A MIXER IS NEEDED AS WELL.



B. POWER SOURCE: DC VOLTAGE

A STEADY SOURCE OF DC POWER IS NEEDED TO RUN MOST RADIO TRANSMITTER CIRCUITS. THIS IS OFTEN IN THE FORM OF AN AC-DC TRANSFORMER. THE MOST COMMON VOLTAGE LEVELS OF DIRECT CURRENT (DC) ELECTRICITY FOR ELECTRONIC CIRCUITS ARE 12 VOLTS OR 5 VOLTS.



C.

RADIO TRANSMITTER

THE RADIO TRANSMITTER CIRCUIT ALLOWS SOUND TO COME IN, TO BE AMPLIFIED AND CONVERTED TO A SIGNAL THAT CAN BE BROADCAST OVER THE AIRWAVES.



D.

TRANSMISSION AMPLIFIER

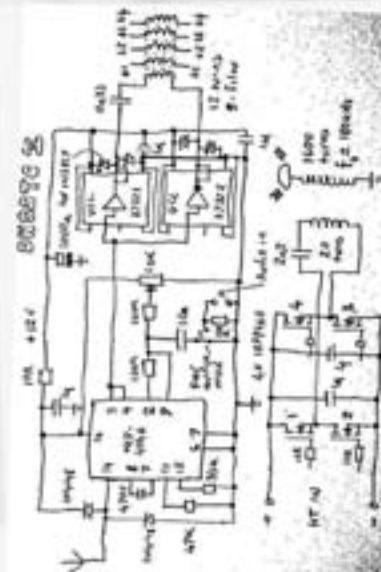
AFTER THE FREQUENCY MODULATION (FM) SIGNAL HAS BEEN CREATED IN THE RADIO TRANSMITTER, IT NEEDS TO BE AMPLIFIED BEFORE SENDING IT THROUGH AN ANTENNA. THIS IS OFTEN A SEPARATE CIRCUIT THAT CAN AMPLIFY THE SIGNAL BY A COUPLE OF WATTS (FOR AMATEUR RADIO) TO THOUSANDS OF WATTS (FOR COMMERCIAL RADIO).



E.

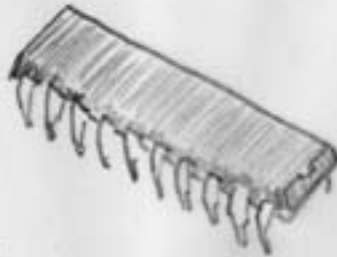
PLL CIRCUIT

A PHASE-LOCKED LOOP CIRCUIT IS A COMMON WAY TO MAKE SURE THAT A RADIO SIGNAL STAYS AT A CERTAIN FREQUENCY. THIS WILL ENSURE THAT A BROADCAST AT A RADIO FREQUENCY, SUCH AS 98.7 MHz FM, STAYS AT THAT FREQUENCY AND DOES NOT WANDER. IT WORKS BY COMPARING AN INPUT SIGNAL TO AN OUTPUT SIGNAL IN A LOOP CONSTANTLY COMPARES THEN CORRECTS THE TWO SIGNALS TO KEEP THEM THE SAME.



F. AUDIO AMPLIFIER: IC CHIP

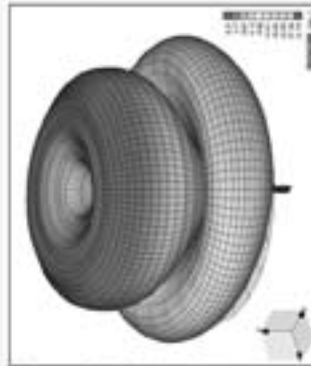
THE SOUND COMING INTO THE RADIO CIRCUIT IS NOT THAT STRONG, SO IT IS COMMON TO AMPLIFY IT USING A SMALL AMPLIFIER DIGITAL IC (INTEGRATED CIRCUIT). THE TRICK IS TO BOOST THE STRENGTH OF THE SIGNAL WITHOUT LOSING QUALITY OR INTRODUCING NOISE.



G.

ANTENNA

AN ANTENNA IS USED TO RADIATE THE ELECTROMAGNETIC RADIO SIGNALS FROM THE AMPLIFIER OUTWARD INTO THE AIR SO THAT THE SIGNAL CAN BE READ IN FROM RADIO RECEIVERS. THE SHAPE AND HEIGHT OF THE TRANSMITTING ANTENNA RELATES DIRECTLY TO THE RADIATING PATTERN AND FREQUENCY AT WHICH THE SIGNAL IS BEING BROADCAST.



Antenna Radiation Pattern

3. References

<http://vimeo.com/2376508>
thisamericanlife.org
transom.org
upbeatnyc.org
http://howto.wired.com/wiki/Set_Up_a_Pirate_Radio_Station
diymedia.net
theradius.tumblr.com
verbalpyrotechnics-ezine.blogspot.com
freeradio.org
<http://www.free103point9.org/artists/1369>
radiolab.org
occupywallst.org
objectstories.org
http://www.cueartfoundation.org/open_call.html
brooklyn-youth-company.org
themoth.org
pigear.com
<http://www.fcc.gov/encyclopedia/rules-regulations-title-47>
<http://antiqueradio.org/transmitter.htm>
<http://transmitters.tripod.com/links.htm>
brettbalogh.com
rfny.hankhayes.com
frequencyfinder.org.uk
ramseyelectronics.com

APPENDIX

i. New York Radio Call Signs

FM Radio Stations in New York State					
Call sign	Frequency	City of License			
WARY	88.1 FM	Valhalla	WNJA	89.7 FM	Jamestown
WCWP	88.1 FM	Brookville	WSSK	89.7 FM	Saratoga Springs
WFRW	88.1 FM	Webster	WINO	89.9 FM	Odessa
WGWR	88.1 FM	Liberty	WKCR-FM	89.9 FM	New York City
WMTQ	88.1 FM	Elmira/Corning	WFBF	89.9 FM	Buffalo
WNYX	88.1 FM	Montgomery	WSUF	89.9 FM	Noyack
WUBJ	88.1 FM	Jamestown	WRVO	89.9 FM	Oswego
WXBA	88.1 FM	Brentwood	WXLG	89.9 FM	North Creek
WXLU	88.1 FM	Peru	WKWV	90.1 FM	Watertown
WLJU	88.3 FM	Southampton	WITH	90.1 FM	Ithaca
WFSO	88.3 FM	Olivebridge	WIFF	90.1 FM	Binghamton
WAER	88.3 FM	Syracuse	WGMC	90.1 FM	Greece
WCOU	88.3 FM	Warsaw	WANZ	90.1 FM	Stamford
WVCR-FM	88.3 FM	Loudonville	WRCL-FM	90.1 FM	Hamilton
WSBU	88.3 FM	St. Bonaventure	WMFU	90.1 FM	Mount Hope
WXLN	88.3 FM	Tupper Lake	WMHQ	90.1 FM	Malone
WKWZ	88.5 FM	Syosset	WUSB	90.1 FM	Stony Brook
WCII	88.5 FM	Spencer	WKRK	90.3 FM	Brooklyn
WRUR-FM	88.5 FM	Rochester	WHCR-FM	90.3 FM	New York City
WPOB	88.5 FM	Plainview	WHPC	90.3 FM	Garden City
WKYJ	88.7 FM	Rouses Point	WAMC-FM	90.3 FM	Albany
WFNP	88.7 FM	Rosendale	WAIH	90.3 FM	Potsdam
WHCL-FM	88.7 FM	Clinton	WDFH	90.3 FM	Ossining
WBFO	88.7 FM	Buffalo	WCIH	90.3 FM	Elmira
WEER	88.7 FM	Montauk	WRVD	90.3 FM	Syracuse
WREM	88.7 FM	Canton	WRUN	90.3 FM	Remsen
WRHV	88.7 FM	Poughkeepsie	WXXY	90.3 FM	Houghton
WRHU	88.7 FM	Hempstead	WJFF	90.5 FM	Jeffersonville
WNYK	88.7 FM	Nyack	WHRW	90.5 FM	Binghamton
WSQA	88.7 FM	Hornell	WBXL	90.5 FM	Baldwinsville
WITC	88.9 FM	Cazenovia	WBER	90.5 FM	Rochester
WFRS	88.9 FM	Smithtown	WSUC-FM	90.5 FM	Cortland
WCVF-FM	88.9 FM	Fredonia	WSLL	90.5 FM	Saranac Lake
WCYI	88.9 FM	Canandaigua	WXXE	90.5 FM	Fenner
WRPJ	88.9 FM	Port Jervis	WLJH	90.7 FM	Glens Falls
WNYO	88.9 FM	Oswego	WGCC-FM	90.7 FM	Batavia
WSIA	88.9 FM	Staten Island	WFUV	90.7 FM	New York City
WSLJ	88.9 FM	Watertown	WETD	90.7 FM	Alfred
WWES	88.9 FM	Mt. Kisco	WPGL	90.7 FM	Pattersonville
WJPZ-FM	89.1 FM	Syracuse	WPNR-FM	90.7 FM	Utica
WBSU	89.1 FM	Brockport	WJNY	90.9 FM	Watertown
WCID	89.1 FM	Friendship	WCDB	90.9 FM	Albany
WDWN	89.1 FM	Auburn	WAMK	90.9 FM	Kingston
WMHT-FM	89.1 FM	Schenectady	WCOT	90.9 FM	Jamestown
WNJU-FM	89.1 FM	New York City	WOXR	90.9 FM	Schuyler Falls
WLJP	89.3 FM	Monroe	WONY	90.9 FM	Oneonta
WGSU	89.3 FM	Geneseo	WNGG	90.9 FM	Gloversville
WMUD-LP	89.3 FM	Moriah	WSLO	90.9 FM	Malone
WMHN	89.3 FM	Webster	WSQG-FM	90.9 FM	Ithaca
WSKG-FM	89.3 FM	Binghamton	WHVP	91.1 FM	Hudson
WCOF	89.5 FM	Arcade	WOSS	91.1 FM	Ossining
WUNY	89.5 FM	Utica	WTSC-FM	91.1 FM	Potsdam
WLSU	89.5 FM	Canton	WSPN	91.1 FM	Saratoga Springs
WKVJ	89.7 FM	Dannemora	WSQE	91.1 FM	Corning
WITR	89.7 FM	Henrietta	WBNY	91.3 FM	Buffalo
WFGB	89.7 FM	Kingston	WCNY-FM	91.3 FM	Syracuse
WALF	89.7 FM	Alfred	WRLL-FM	91.3 FM	Southampton
WEOS	89.7 FM	Geneva	WOLN	91.3 FM	Olean
WRUC	89.7 FM	Schenectady	WXLH	91.3 FM	Blue Mountain Lake
WRHO	89.7 FM	Oneonta	WVKR-FM	91.3 FM	Poughkeepsie
			WRPI	91.5 FM	Troy
			WNYE	91.5 FM	New York City
			WVHC	91.5 FM	Herkimer

WSQX-FM	91.5 FM	Binghamton	WAQX-FM	95.7 FM	Manlius	WDHI	100.3 FM	Delhi	WIRQ	104.7 FM	Rochester	
WXXI-FM	91.5 FM	Rochester	WPIG	95.7 FM	Olean	WNVN	100.3 FM	Sylvan Beach	WBBS	104.7 FM	Fulton	
WFRH	91.7 FM	Kingston	WCQL	95.9 FM	Queensbury	WNAR-LP	100.3 FM	Arcade	WELJ	104.7 FM	Montauk	
WICB	91.7 FM	Ithaca	WVOS-FM	95.9 FM	Liberty	WDVI	100.5 FM	Rochester	WOGM-LP	104.7 FM	Jamestown	
WOSR	91.7 FM	Middletown	WJVC	96.1 FM	Ronkonkoma	WHUD	100.7 FM	Peekskill	WUOW-LP	104.7 FM	Oneonta	
WRVJ	91.7 FM	Watertown	WJYE	96.1 FM	Buffalo	WDRX-LP	100.7 FM	Cortland	WSPK	104.7 FM	Poughkeepsie	
WSQC-FM	91.7 FM	Oneonta	WPKF	96.1 FM	Poughkeepsie	WEXF	100.7 FM	Henderson	WKDL-FM	104.9 FM	Brockport	
WXLB	91.7 FM	Boonville	WODZ-FM	96.1 FM	Rome	WRCK	100.7 FM	Utica	WNGZ	104.9 FM	Montour Falls	
WCEL	91.9 FM	Plattsburgh	WVLF	96.1 FM	Norwood	WKLI-FM	100.9 FM	Albany	WNYL-LP	104.9 FM	Lima	
WCEB	91.9 FM	Corning	WAJZ	96.3 FM	Voorheesville	WKRL-FM	100.9 FM	North Syracuse	WZMR	104.9 FM	Altamont	
WNGN	91.9 FM	Argyle	WXNY-FM	96.3 FM	New York City	WCDO-FM	100.9 FM	Sidney	WKOL	105.1 FM	Plattsburgh	
WSHR	91.9 FM	Lake Ronkonkoma	WBKX	96.5 FM	Fredonia	WPGI	100.9 FM	Horsheds	WOLF-FM	105.1 FM	DeRuyter	
WRVN	91.9 FM	Utica	WCMF-FM	96.5 FM	Rochester	WCBS-FM	101.1 FM	New York City	WWPR-FM	105.1 FM	New York City	
WCKR	92.1 FM	Hornell	WVNV	96.5 FM	Malone	WBUG-FM	101.1 FM	Fort Plain	WKQP	105.3 FM	Hornell	
WDLA-FM	92.1 FM	Walton	WKLV-FM	96.7 FM	New Rochelle	WBRV-FM	101.3 FM	Boonville	WKKR	105.3 FM	Grand Gorge	
WRNQ	92.1 FM	Poughkeepsie	WDCD-FM	96.7 FM	Clifton Park	WCPV	101.3 FM	Essex	WPTY	105.3 FM	Calverton-Roanoke	
WNLG	92.1 FM	Sag Harbor	WWLF-FM	96.7 FM	Oswego	WRMM-FM	101.3 FM	Rochester	WDBY	105.5 FM	Patterson	
WSEN-FM	92.1 FM	Baldwinsville	WVTT	96.7 FM	Portville	WQAR	101.3 FM	Stillwater	WLPW	105.5 FM	Lake Placid	
WVTK	92.1 FM	Port Henry	WXZO	96.7 FM	Willsboro	WRCD	101.5 FM	Canton	WTKV	105.5 FM	Oswego	
WFLY	92.3 FM	Troy	WYSX	96.7 FM	Morristown	WPDH	101.5 FM	Poughkeepsie	WSKU	105.5 FM	Little Falls	
WXRK	92.3 FM	New York City	WGRF	96.9 FM	Buffalo	WMXO	101.5 FM	Olean	WQSH	105.7 FM	Malta	
WKGB-FM	92.5 FM	Conkling	WHEN	96.9 FM	East Hampton	WXHC	101.5 FM	Homer	WMRV-FM	105.7 FM	Endicott	
WBEE-FM	92.5 FM	Rochester	WRRB	96.9 FM	Arlington	WGKV	101.7 FM	Pulaski	WJZR	105.9 FM	Rochester	
WGFR	92.7 FM	Glens Falls	WOUR	96.9 FM	Utica	WFLK	101.7 FM	Geneva	WXTL	105.9 FM	Syracuse	
WENY-FM	92.7 FM	Elmira	WQHT	97.1 FM	New York City	WBEA	101.7 FM	Southold	WBLI	106.1 FM	Patchogue	
WRRV	92.7 FM	Middletown	WZHD	97.1 FM	Canaseraga	WLOF	101.7 FM	Attica	WPDA	106.1 FM	Jeffersonville	
WQTK	92.7 FM	Ogdensburg	WMYT	97.3 FM	Schoharie	WLTB	101.7 FM	Johnson City	WNKI	106.1 FM	Corning	
WQBU-FM	92.7 FM	Garden City	WZAD	97.3 FM	Wurtsboro	WNYQ	101.7 FM	Hudson Falls	WFAF	106.3 FM	Mount Kisco	
WXUR	92.7 FM	Herkimer	WYXL	97.3 FM	Ithaca	WJIV	101.9 FM	Cherry Valley	WMCR-FM	106.3 FM	Oncida	
WBUF	92.9 FM	Buffalo	WFRY-FM	97.5 FM	Watertown	WHUG	101.9 FM	Jamestown	WYZY	106.3 FM	Saranac Lake	
WBPM	92.9 FM	Saugerties	WHAZ-FM	97.5 FM	Hoosick Falls	WEMP	101.9 FM	New York City	WKRH	106.5 FM	Minetto	
WEHM	92.9 FM	Southampton	WALK-FM	97.5 FM	Patchogue	WZKZ	101.9 FM	Alfred	WPYX	106.5 FM	Albany	
WNTQ	93.1 FM	Syracuse	WTBD-FM	97.5 FM	Delhi	WJCA	102.1 FM	Albion	WYRK	106.5 FM	Buffalo	
WFKL	93.3 FM	Fairport	WEXT	97.7 FM	Amsterdam	WAVR	102.1 FM	Waverly	WKGZ	106.7 FM	Irondequoit	
WCAN	93.3 FM	Canajoharie	WCZX	97.7 FM	Hyde Park	WDNB	102.1 FM	Jeffersonville	WBDR	106.7 FM	Copenhagen	
WBWZ	93.3 FM	New Paltz	WENI-FM	97.7 FM	Big Flats	WZUN	102.1 FM	Phoenix	WRRQ	106.7 FM	Windsor	
WCIZ-FM	93.3 FM	Watertown	WRIP	97.9 FM	Windham	WKXF	102.3 FM	Ballston Spa	WLTW	106.7 FM	New York City	
WSLP	93.3 FM	Saranac Lake	WPXY-FM	97.9 FM	Rochester	WBAB	102.3 FM	Babylon	WKZA	106.9 FM	Lakewood	
WWSE	93.3 FM	Jamestown	WSKQ-FM	97.9 FM	New York City	WRGR	102.3 FM	Tupper Lake	WSYR-FM	106.9 FM	Solvay	
WQRW	93.5 FM	Wellsville	WSKS	97.9 FM	Whitesboro	WVOR	102.3 FM	Canandaigua	WLIR-FM	107.1 FM	Hampton Bays	
WORK	93.5 FM	Remsen	WZXP	97.9 FM	Au Sable	WBAZ	102.5 FM	Bridgehampton	WFFG-FM	107.1 FM	Corinth	
WVBR-FM	93.5 FM	Ithaca	Binghamton	98.1 FM	Binghamton	WTSS	102.5 FM	Buffalo	WNMR	107.1 FM	Dannemora	
WVIP	93.5 FM	New Rochelle	WKJY	98.3 FM	Hempstead	WUMX	102.5 FM	Rome	WXPK	107.1 FM	Briarcliff Manor	
WZCR	93.5 FM	Hudson	WQRS	98.3 FM	Salamanca	WLGZ-FM	102.7 FM	Webster	WKVU	107.3 FM	Utica	
WBLK	93.7 FM	Buffalo	WTRY-FM	98.3 FM	Rotterdam	WICY-FM	102.7 FM	Malone	WHTK-FM	107.3 FM	South Bristol Township	
WCOV-FM	93.7 FM	Clyde	WSUL	98.3 FM	Monticello	WLKY	102.7 FM	Cape Vincent	WRWD-FM	107.3 FM	Highland	
WYAI	93.7 FM	Scotia	WVIN-FM	98.3 FM	Bath	WWFS	102.7 FM	New York City	WBLS	107.5 FM	New York City	
WKXZ	93.9 FM	Norwich	WKSE	98.5 FM	Niagara Falls	WCLX	102.9 FM	Westport	WBBI	107.5 FM	Endwell	
WDNY-FM	93.9 FM	Dansville	WBON	98.5 FM	Westhampton	WMHR	102.9 FM	Syracuse	WLRG-LP	107.5 FM	Corning	
WQKE	93.9 FM	Plattsburgh	WCTW	98.5 FM	Catskill	WNCQ-FM	102.9 FM	Canton	WGNA-FM	107.7 FM	Albany	
WNYC-FM	93.9 FM	New York City	WCKM-FM	98.5 FM	Lake George	WJGK	103.1 FM	Newburgh	WECW	107.7 FM	Elmira	
WIHR-LP	94.1 FM	Jamestown	WNYR-FM	98.5 FM	Waterloo	WGY-FM	103.1 FM	Albany	WLKK	107.7 FM	Wethersfield Township	
WOTT	94.1 FM	Calcium	WGMM	98.7 FM	Corning	WBZO	103.1 FM	Bay Shore	WELV-LP	107.9 FM	Ellenville	
WNYV	94.1 FM	Whitehall	WRKS	98.7 FM	New York City	WCIK	103.1 FM	Bath	WRFA-LP	107.9 FM	Jamestown	
WZNE	94.1 FM	Brighton	WPAC	98.7 FM	Ogdensburg	WTOJ	103.1 FM	Carthage	WWHT	107.9 FM	Syracuse	
WKXP	94.3 FM	Kingston	WLZW	98.7 FM	Utica	WZOD	103.1 FM	Oneonta				
WIGX	94.3 FM	Smithtown	WNYP-LP	98.7 FM	Ripley	WEDG	103.3 FM	Buffalo				
WLRF-LP	94.3 FM	Binghamton	WBZA	98.9 FM	Rochester	WMXW	103.3 FM	Vestal				
WLZY	94.3 FM	Elmira	WAAL	99.1 FM	Binghamton	WKTU	103.5 FM	Lake Success				
WNED-FM	94.5 FM	Buffalo	WKIP-FM	99.3 FM	Ellenville	WJQZ	103.5 FM	Wellsville				
WYKV	94.5 FM	Ravena	WLLG	99.3 FM	Lowville	WQBJ	103.5 FM	Cobleskill				
WYYY	94.5 FM	Syracuse	WLLW	99.3 FM	Seneca Falls	WUUF	103.5 FM	Sodus				
WLJX-LP	94.7 FM	Ridge	WSNN	99.3 FM	Potsdam	WQNY	103.7 FM	Ithaca				
WIYN	94.7 FM	Deposit	WBAI	99.5 FM	New York City	WFAS-FM	103.9 FM	Bronxville	WNYU-FM	89.1	WKCR-FM	89.9
WBAR-FM	94.7 FM	Lake Luzerne	WDCX-FM	99.5 FM	Buffalo	WANC	103.9 FM	Ticonderoga	WHCR-FM	90.3	WFUV	90.7
WMHI	94.7 FM	Cape Vincent	WRVE	99.5 FM	Schenectady	WDKX	103.9 FM	Rochester	WNYE	91.5	WXRK	92.3
WYUL	94.7 FM	Chateaugay	WOKN	99.5 FM	Southport	WRKN-FM	103.9 FM	Riverhead	WNYC-FM	93.9	WPLJ	95.5
WKLL	94.9 FM	Frankfort	WTKW	99.5 FM	Bridgeport	WQBK-FM	103.9 FM	Rensselaer	WXNY-FM	96.3	WQHT	97.1
WFXF	95.1 FM	Honeoye Falls	WIJX	99.7 FM	Monticello	WSRK	103.9 FM	Oneonta	WSKQ-FM	97.9	WRKS	98.7
WLFK-FM	95.3 FM	Gouverneur	WBGK	99.7 FM	Newport Village	WVOA-FM	103.9 FM	Mexico	WBAI	99.5	WCBS-FM	101.1
WHFM	95.3 FM	Southampton	WZ XV	99.7 FM	Palmyra	WHTT-FM	104.1 FM	Buffalo	WEMP	101.9	WWFS	102.7
WBKT	95.3 FM	Norwich	WIII	99.9 FM	Cortland	WFRG-FM	104.3 FM	Utica	WAXQ	104.3	WWPR-FM	105.1
WFIZ	95.5 FM	Dundee	WBTZ	99.9 FM	Plattsburgh	WAXQ	104.3 FM	New York City	WLTW	106.7	WBLS	107.5
WPLJ	95.5 FM	New York City	WDST	100.1 FM	Woodstock	WTMM-FM	104.5 FM	Mechanicville				
WYJB	95.5 FM	Albany	WKBE	100.3 FM	Warrensburg							

FM Radio Stations in New York City

WNYU-FM	89.1	WKCR-FM	89.9
WHCR-FM	90.3	WFUV	90.7
WNYE	91.5	WXRK	92.3
WNYC-FM	93.9	WPLJ	95.5
WXNY-FM	96.3	WQHT	97.1
WSKQ-FM	97.9	WRKS	98.7
WBAI	99.5	WCBS-FM	101.1
WEMP	101.9	WWFS	102.7
WAXQ	104.3	WWPR-FM	105.1
WLTW	106.7	WBLS	107.5

ii. Fictional Radio Stations

ACME - a station seen in the *Animaniacs*.

BDRX - Bedrock, prehistoric U.S., *The Flintstones*.

CIBJ-FM - a fictional campus radio station set in Toronto, Ontario from *Drop the Beat*.

Crucial FM - a fictional pirate radio station on the *Lenny Henry Comedy TV Series* on BBC 1.

KAD - all-advertisement radio, from *Duck's Breath Mystery Theater*.

KACL-AM - from the TV show *Frasier*: half talk, half salsa.

KBBL and **KBBL-FM** (AM 970, FM 102.5) - radio stations from *The Simpsons*.

KBHR - from the TV show *Northern Exposure*.

KBLUB - a radio station on *SpongeBob SquarePants* where Patrick Star and SpongeBob played Patrick's new song that he created.

KBULLY - a pirate radio station on *Pelwick* created by the bully of the show.

KCPY - used in season two of *Knight Rider*.

KCUF - from the book *The Crying of Lot 49*.

KDUM - from the comic *Garfield and Friends*.

KFLH-FM 95.6 - San Francisco, California, from the TV show *Full House*.

KFLM 89.8 FM - pirate radio station in the bowels of Flamingo High School in *Parker Lewis Can't Lose*.

KFSL Fossil 103 - radio station from *The Simpsons*.

KJAZZ-FM - radio station from *The Simpsons*.

KKHV - from the movie *Back to the Future*.

KOLD - an all-senior-citizen radio station from the cartoon *SpongeBob SquarePants*.

KORN-AM - from the TV show *Hee-Haw*.

KOW - Goldfield, Nevada, from the movie *Vanishing Point*.

KPPX - from the classic rocker movie *Airheads*.

KRUD - a station from *SpongeBob SquarePants*.

KTIM - from *The Fairly OddParents*, a radio station set up by Timmy Turner, the protagonist.

LIVE 34 - *Earth Colony 34*, a news station in the *Doctor Who* audio drama of the same name.

M Jazz A Jazz - station on *Hey Arnold*.

Radio Active - from the radio series of the same name.

Radio Enfer - in the show of the same name, a high-school radio station.

Radio Free Roscoe - a fictional pirate radio station created by four teen characters in the show of the same name.

Radio Norwich - from *I'm Alan Partridge*.

Fictional Radio Stations (continued)

Radio Roo - a fictional radio station featured in the children's program of the same name.

Radio Rock - pirate rock-and-roll radio station broadcast from an offshore boat, from the movie *The Boat That Rocked* (known as *Pirate Radio* in the United States).

Radio Shuttleworth - from the radio series of the same name.

WABBIT and **KPUT** - competing music video stations run by Bugs Bunny and Daffy Duck, respectively, in the TV special *Bugs VS Daffy: Battle of the Music Video Stars*.

WBBY - from the comic strip *Doonesbury*.

KBEX - *Birds Of Prey* (1973) and *MacGyver*.

WCIK - Stephen King's *Under the Dome*.

WENN - set in Pittsburgh, from the television series *Remember WENN*.

WEZY - from the movie *O' Brother, Where Art Thou*.

WFBB - from the TV show *Seinfeld*.

WINO - from LP "*Take Offs & Put Ons*" by George Carlin.

WLT - from the Garrison Keillor novel *WLT: A Radio Romance*.

WMCY - from the Kurt Vonnegut novel *Breakfast of Champions*.

WNYX 585 AM - a fictional AM news station in New York City from *NewsRadio*.

WOLD - Boise, Idaho, from the song *W*O*L*D* by Harry Chapin.

WOW - from the TV show *Happy Days*.

WPIG - a competitor to WKPR from *WKRP in Cincinnati*.

WPIG 95.7 FM- unrelated to WPIG Cincinnati. Rock station set in Aurora, Illinois in the movie *Wayne's World 2*.

WQHG 97.1 FM - Quahog, Rhode Island, *Family Guy*.

WTWP - from a P.D.Q. Bach album, *WTWP Classical Talkity-Talk Radio*.

WUSA - is the setting of the film of the same name, which depicts it as a talk radio station in New Orleans, Louisiana.

WVWA 900 AM - based in Pound Ridge, New York. Top 40 station that was the basis of the radio-industry satire tape "*NINE!*"

WZUP - Detroit *Martin Show* fictional radio show Martin Payne (played by Martin Lawrence) hosted.

WZAZ - from the movie *Airplane!*

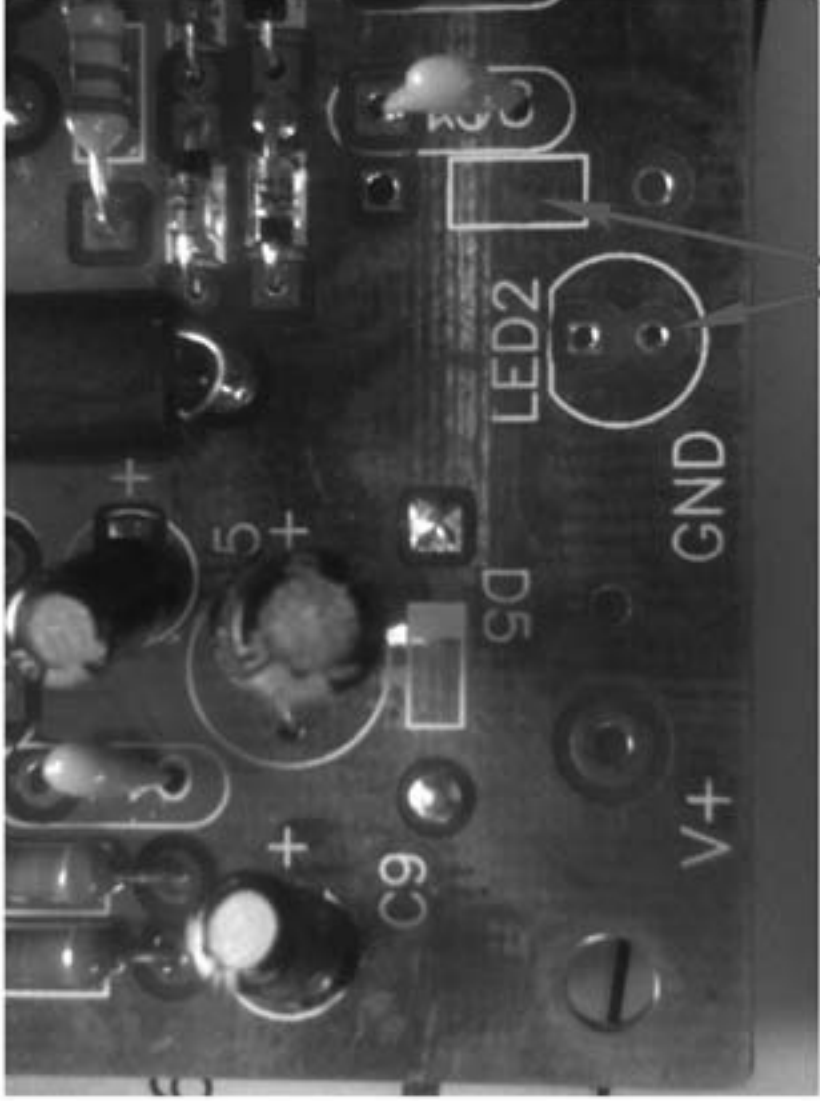
iii. Technical Correspondence: John Park and Stephen Dunifer

----- Forwarded message -----
From: **John Park** <park@uoregon.edu>
Date: Thu, Sep 8, 2011 at 12:04 PM
Subject: Questions/troubleshooting - 1.5W PLL circuit
To: freeradioberkeley@gmail.com
Cc: Brian Gillis <gillislab@gmail.com>

Greetings to the folks at Berkeley Free Radio.
My name is John Park and I am assembling the PLL and 40W transmitter kits with my colleague Brian Gillis at the University of Oregon. Brian ordered the kits around a month and a half ago and I am just now putting the final touches on the circuit.

In finishing the 1.5W PLL circuit, I have hit a couple roadblocks and I am hoping to get your clarification. Thank you for you time to help me figure out these last steps:

1) Q1 (below) - LED2 and resistor did not ship with kit. Is this optional?



Is this LED and resistor optional? It did not ship with PLL kit. If it is necessary, what resistor and LED type should I use?

Q2: C5 was missing and R1 & R21 were not clearly labeled. Can you clarify what C5 should be so I can add this to the circuit. Also, is R1 supposed to be the green component? Do these components look correct? If not, where should the resistors be located?



C5 was missing in kit. What type of capacitor should I use here?

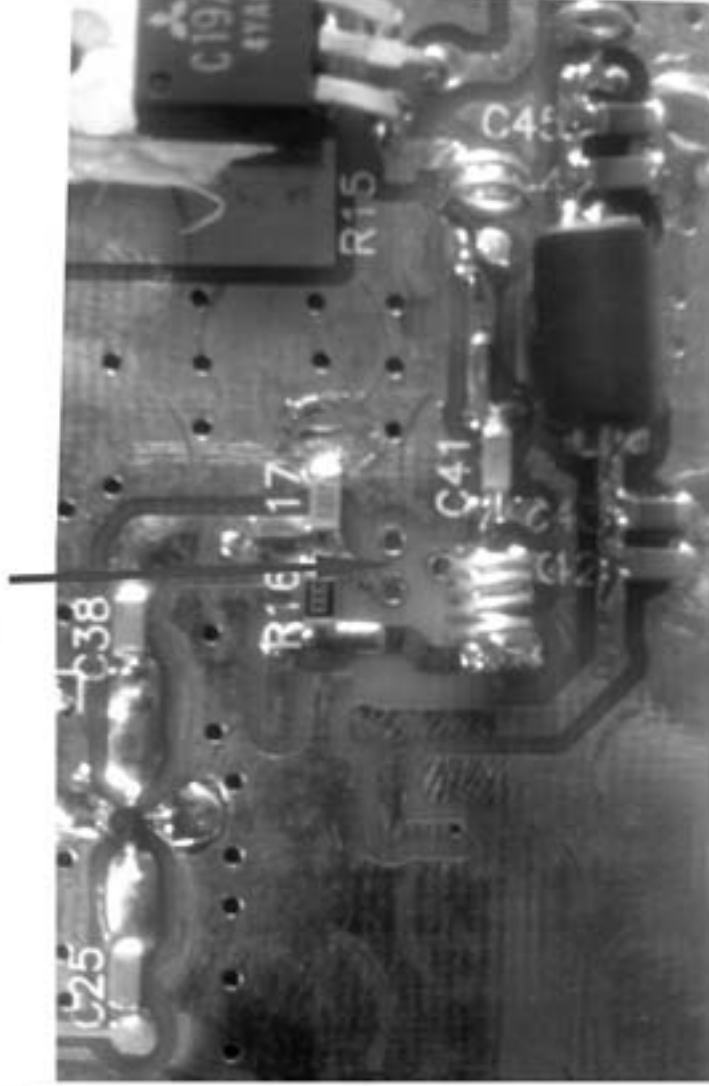
There was some spatial confusion



about R1 and R21. Can you tell me where the green one should be?

Q3 (below): There appears to be an unlabeled slot for a 3-legged component to go into. Is the C2053 18G supposed to go there (see Q4)?

What component is supposed to go here?

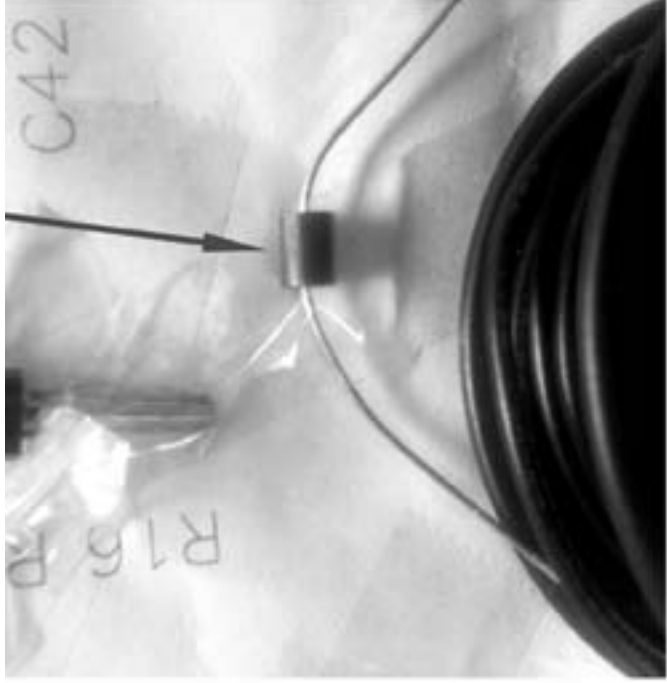


Q4 (below): These are the last two parts that shipped with the other components. These were taped down in unlabeled spaces on the paper.

Mystery component (not labeled) on paper. C2053 18G. Where does this belong?

This one is not labeled on paper either. Where does this belong?





THANK YOU SO MUCH for you help on these issues. We are big fans of what you are doing (and have been doing for so long) in Berkeley.

Kind Regards,
John Park

Cell (if this is easier): [REDACTED]

John J Park
Career Officer of Instruction
Digital Arts | Department of Art
University of Oregon
Phone: 5511_346-2483
Email: park@uoregon.edu

----- Forwarded Message

From: "John J. Park" <park@uoregon.edu>
Date: Sun, 27 Nov 2011 19:00:47 -0800
To: Stephen Dunifer <stepad@berkeley@gmail.com>, Brian Gillis <bgillis@uoregon.edu>
Subject: PLL 1.5Watt - Question - NEED your help...

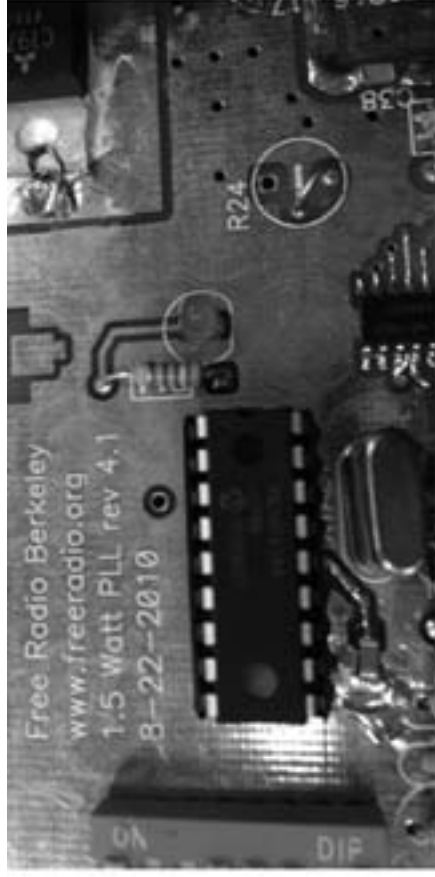
Dear Stephen,
Good evening. This is John Park and Brian Gillis from the University of Oregon writing regarding the 1.5W PLL transmitter kit that we purchased from you. I have gone through all the directions of setting up the transmitter and thought that everything was complete. Subsequently, I have some questions. When powering up the device (with the output signal going through the Daiwa Power Meter and then to the Dummy Load), I get the red LED turning on, but the power meter does not move at all. Nothing is heating up (the transistor is fine, nothing hot or smoking or bad-smelling)...which is good news. But I am getting no feedback or at least not a output from the transmitter to the power meter.

I looked over the solder joints and have done testing with the continuity checker with a multimeter and it appears that it all checks out. The part of the directions that I had a hard time interpreting is the following:

"Take one of the hookup wires provided, strip and tin one end and solder one lead to the spot marked 13.5volts near the optional voltage regulator on the layout diagram..."

I cannot find anything marked 13V anywhere near the optional power regulator. Do I need to supply a second area of the board with 13.5V? If so, where does it belong? I opted not to add on the "optional power regulator" so I added the jumper between those two lines as the directions indicated, but do I still need to supply power to that area? Below is what that area currently looks like:





I only saw/found one area of the circuit board that indicated voltage. I have the 13.5V going into this area below:



It seems to be working fine because the voltage going into the LM7812 is 13.5V in and 11.8v out.

Another potential problem area. The voltage regulator near the pic chip that is supposed to be a 7805 (at least that what the parts list reads), is actually a L7833L (putting out 3.3V). It's the one that I received with the PLL kit. Is that the wrong voltage? Is that causing things to not work potentially?

Thirdly, I do not have an LED hooked up (as seen in the above picture). Is leaving that area blank a problem?

I'm just trying to troubleshoot any areas that would keep the transmitter from sending a signal to the Dawa Power Meter.

Thank you for any help or constructive ideas.

Best,

John Park
& Brian Gillis

John J Park
Career Officer of Instruction
Digital Arts | Department of Art
University of Oregon
Phone: (541) 346-2883
Email: parkj@uoregon.edu

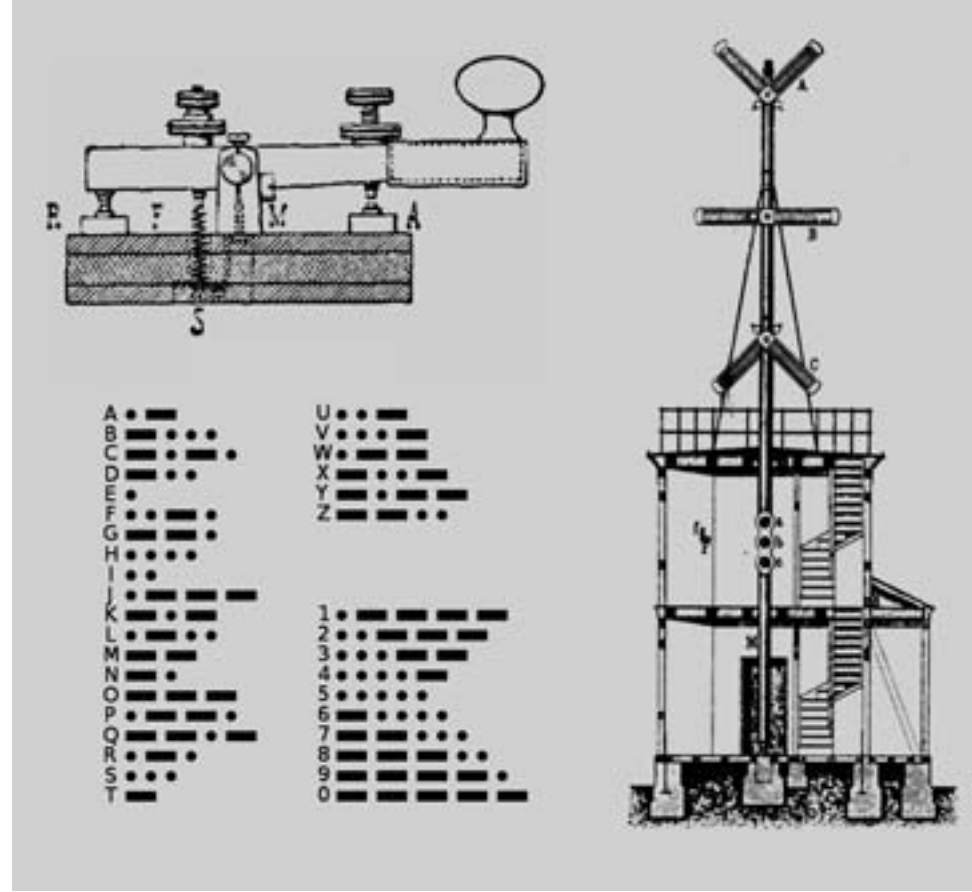
From: Stephen Dunster <stepdunster@comcast.com>
Date: November 27, 2011 10:45:24 PM PST
To: "John J. Park" <ccprk@uoregon.edu>
Subject: Re: PLL 1.5Watt - Question - NEED your help...

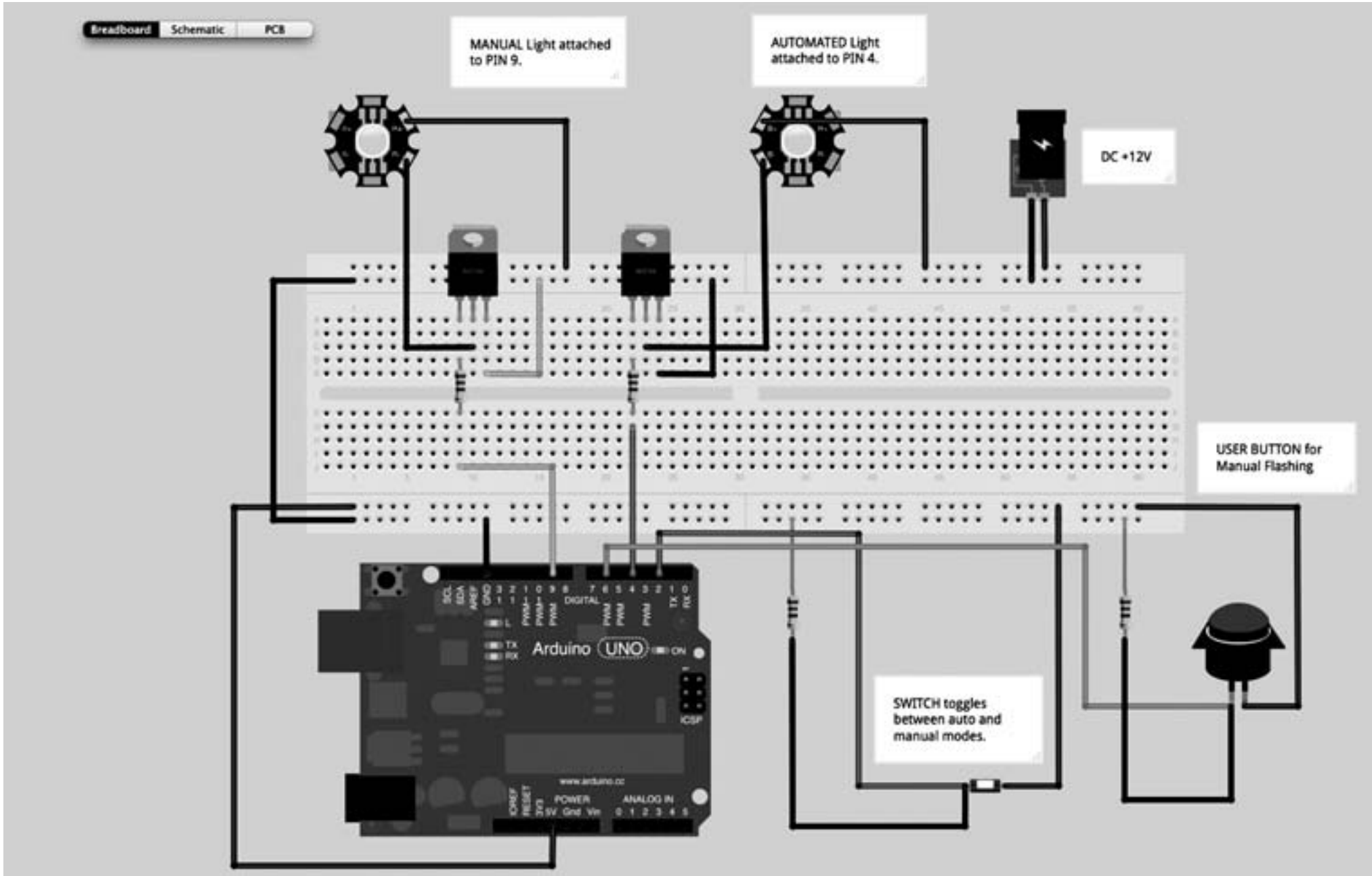
Hi,

The regulator is supposed to be a 78L05, not a 3.3 volt regulator. The LED is gone out when the PLL locks to frequency. The transistor is supposed to be bolted down to a small heat sink included with the kit. We do not use the optional regulator. The second LED is optional. It looks like L5, the small green inductor is not connected properly, you have one lead grounded. That lead goes instead to the output trace of the monolithic amp - next to C3B. Be sure to check continuity of L5, grounding it may have drawn too much current through it. This is why you are not seeing any output power, take care of the heatsink issue first, however. It would be helpful to see a picture of the entire board.

Stephen

iv. Telegraph Schematic: LED Lights





v. Free Radio Mission/Manifesto

Some of the most important things that make a community happen between people: a shared space, a shared cultural ethos, a shared need, a shared mode of communication, a shared voice, and a shared system for the distribution of information. In this age of the decentralized community, where we have moved from a band/clan system to a state system it is more and more difficult to see how necessary we are to each other. As more of our interactions are mediated by technology, the relationships we have and the information we access have to be sought after rather than happened upon. This is the case despite unparalleled access to and prevalence of open source information. In some cases, the most common ways we access information are intentionally limited by outside entities. However, radio is still a place where random knob-spinning or button-pushing can bear fruit, where something broadcasted is happened upon. Where limiting access is significantly more difficult. Where a voice hangs for the taking as a part of the larger fabric of society, where it can be happened upon rather than sought after.

Free Radio was born out of a belief that every community has a voice that could be a relevant part of a larger society, and an investment in the development and proliferation of this voice will make its community richer and in doing so, contribute exponentially to a population outside of its own.

Free Radio was conceived of by artists, is sited at CUE Art Foundation, and driven by the reconsideration of a gallery as a cultural hub altogether, so as not only to be a place

that uses art to catalyze discourse and the dissemination of information, but also a site for tool building while mining and solidifying the identity of a community.

Free Radio is made possible by an international organization of people ranging from artists and computer hackers to scientists and educators who are in place to work with specific local communities to facilitate community individuation, the development of a voice, and the weekly construction of a functioning radio station and culminating broadcast for the dissemination of that voice.

Free Radio is as much about being a witness as it is about being a participant.

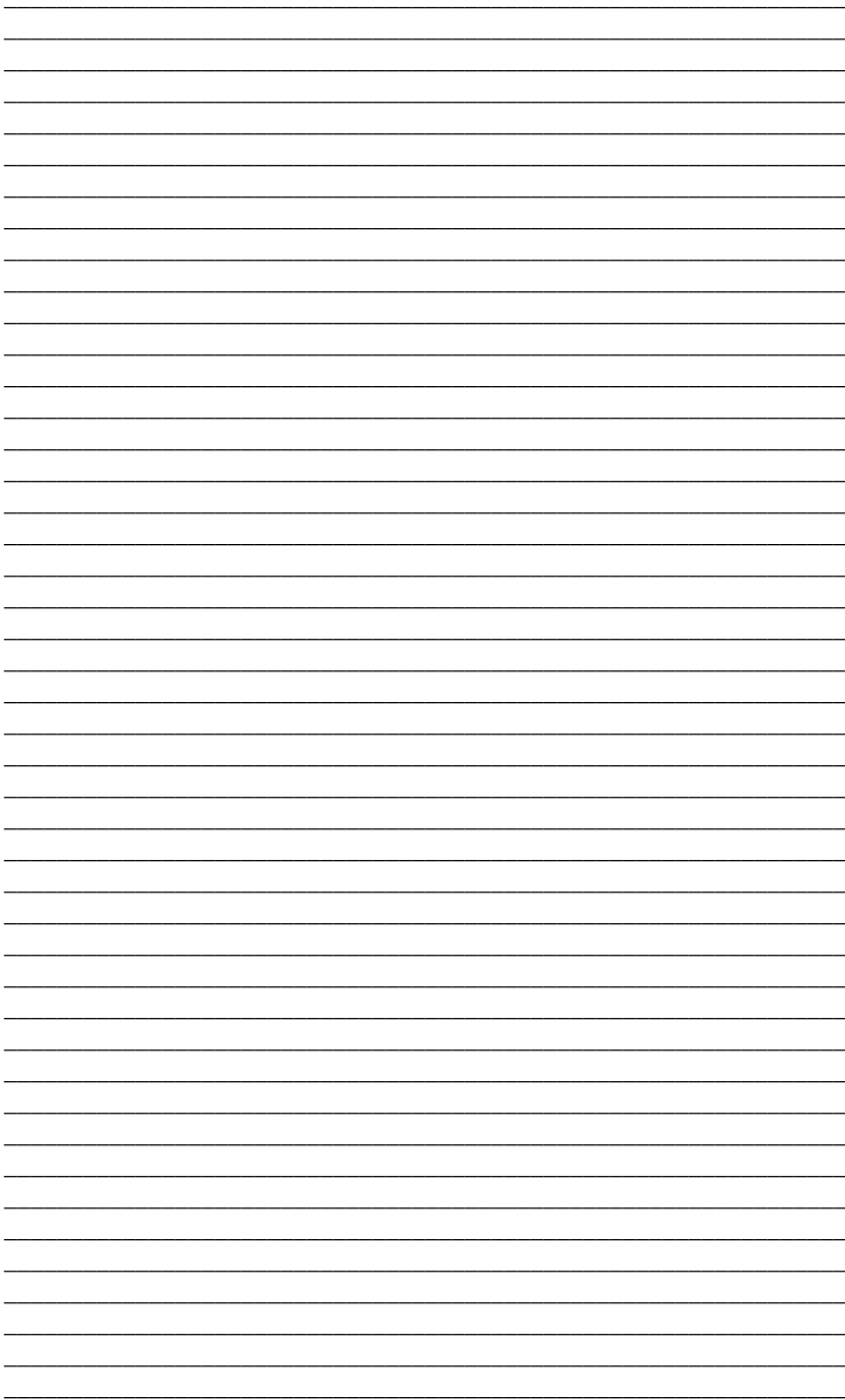
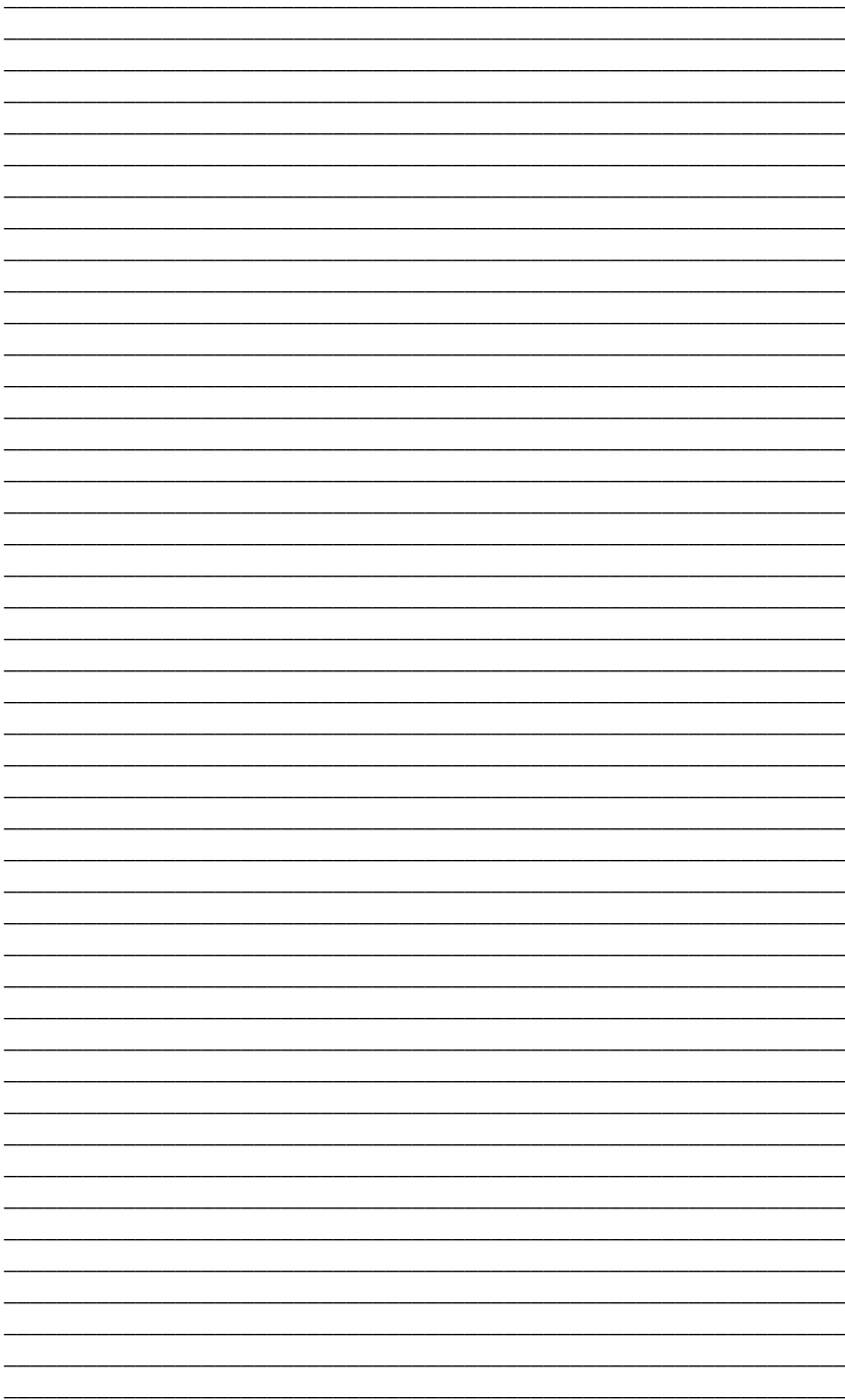
Free Radio's chief concern is the incubation and perpetual broadcast of this process of community individuation and the mass dissemination of a voice, whether live or as an archived loop on the Internet.

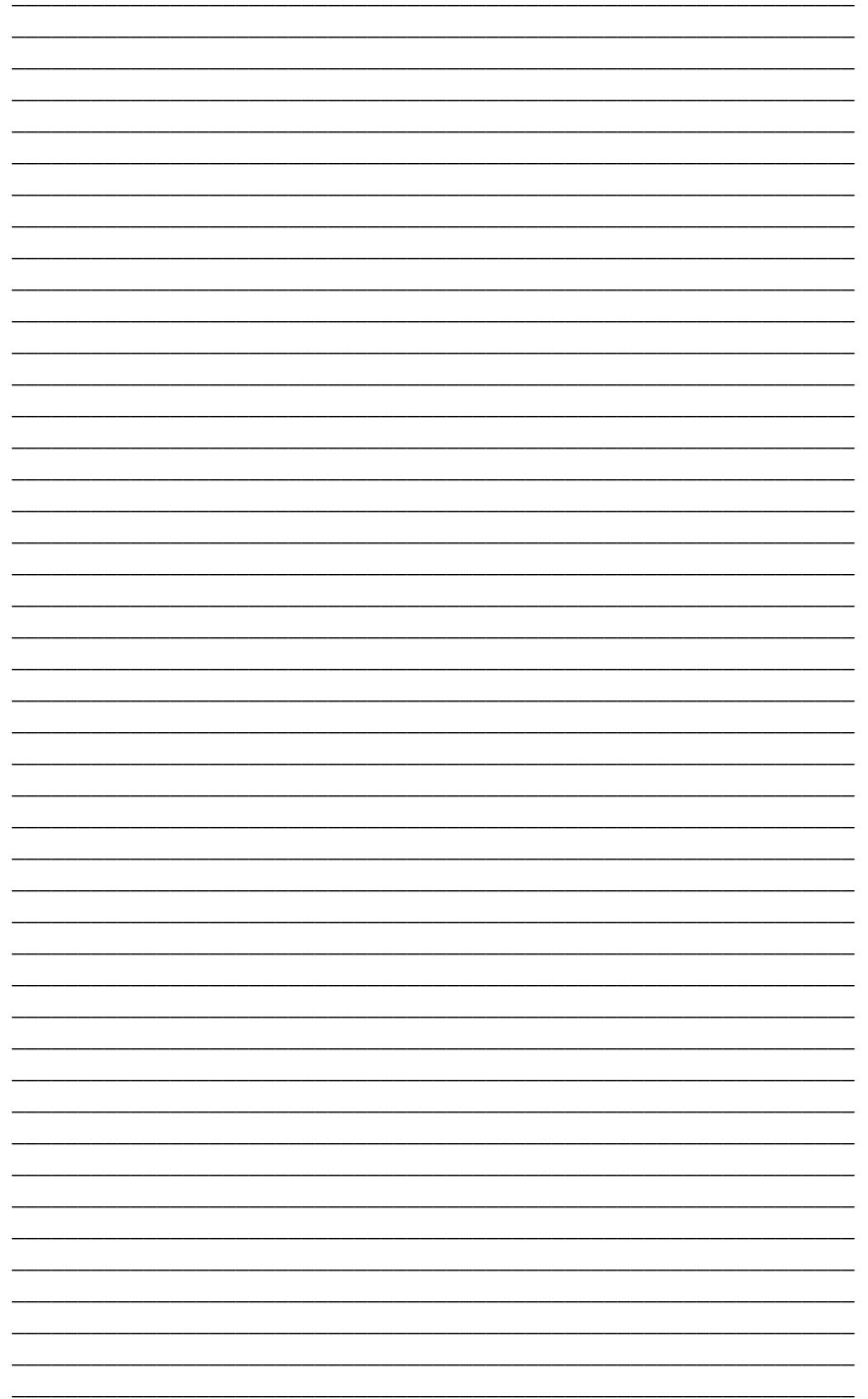
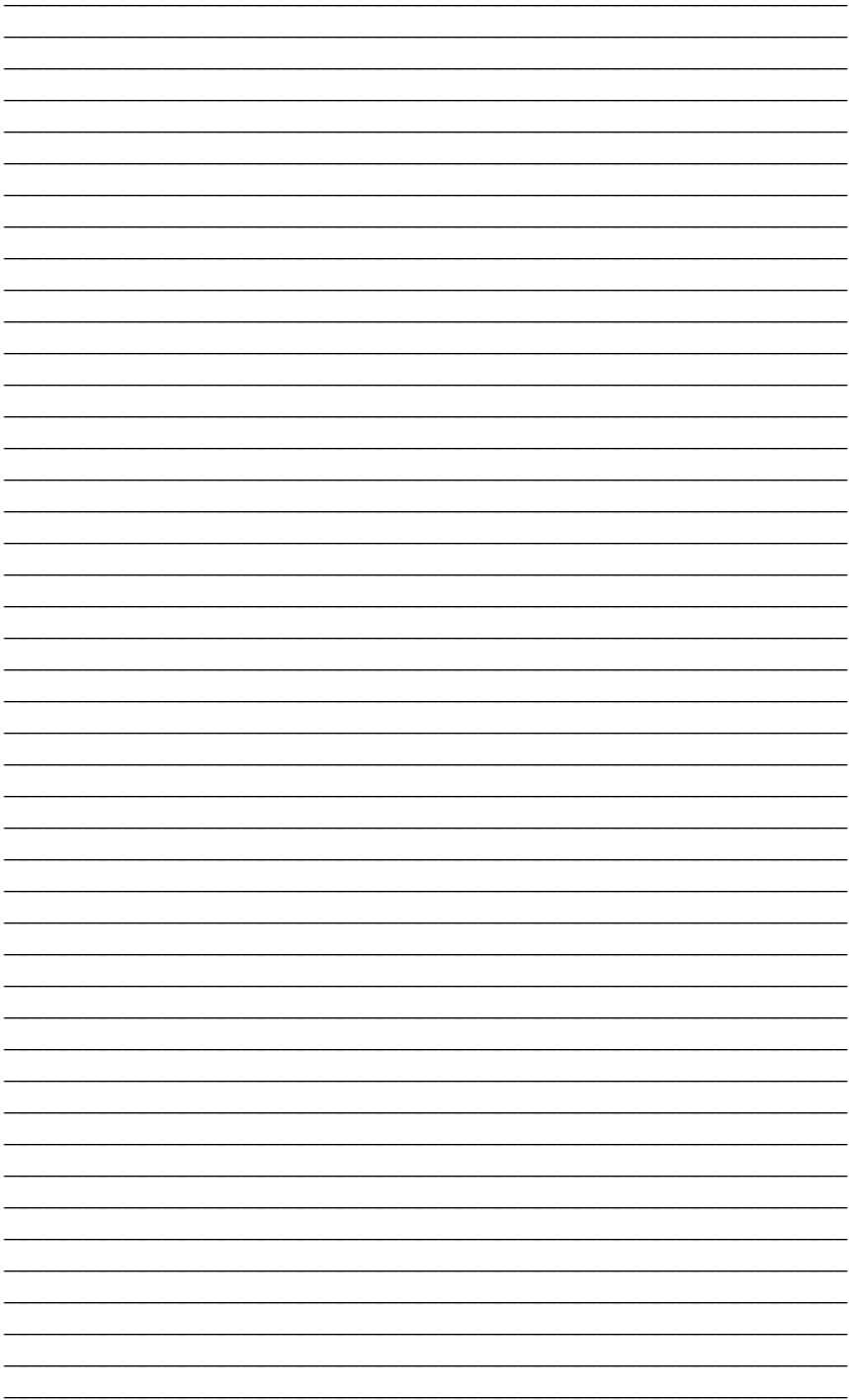
Free Radio is about the mass distribution of open-source information, which focuses on the democratization of a technology that is free to access, ungovernable, relatively easy to build, and so useful in a free society, RADIO.

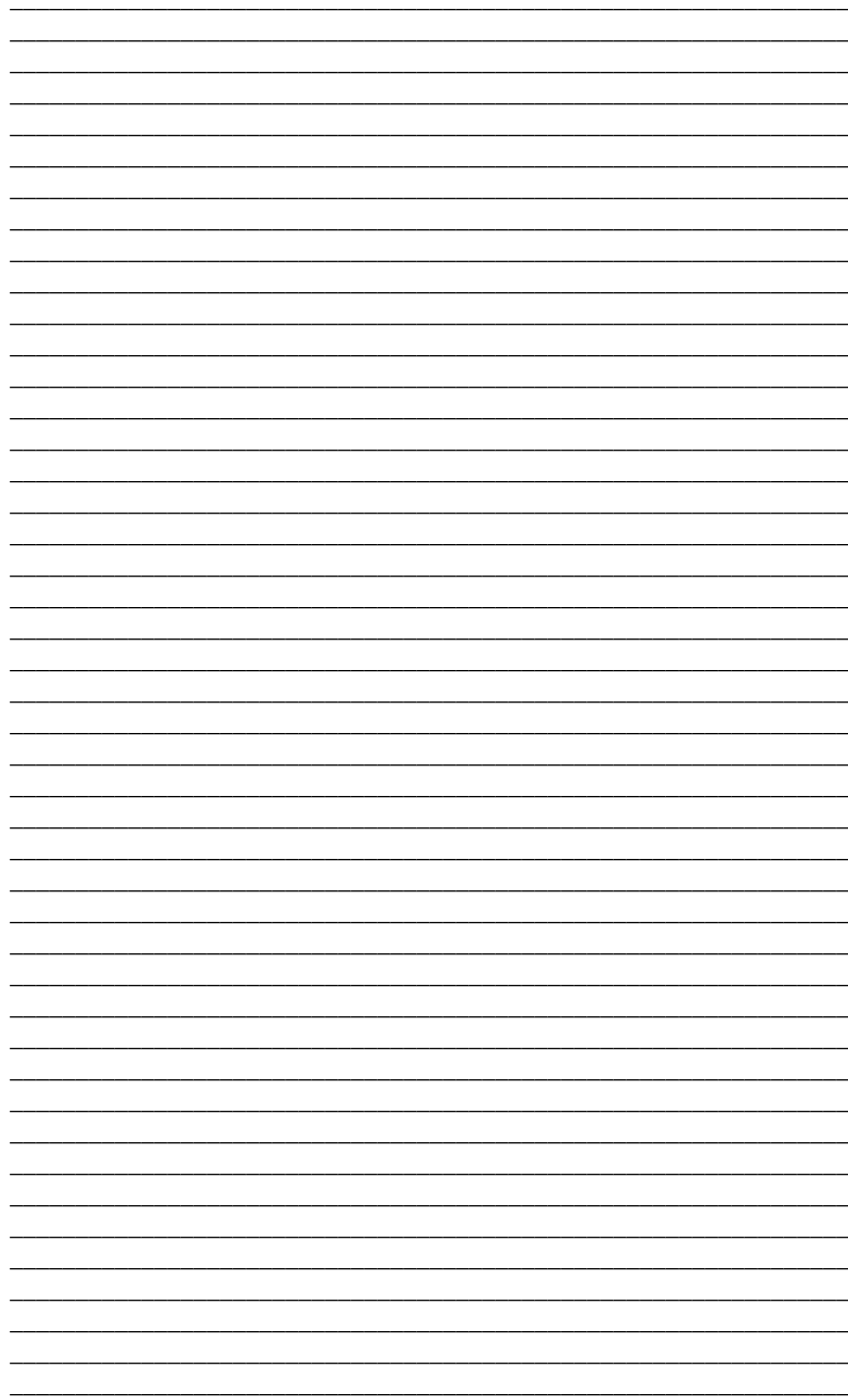
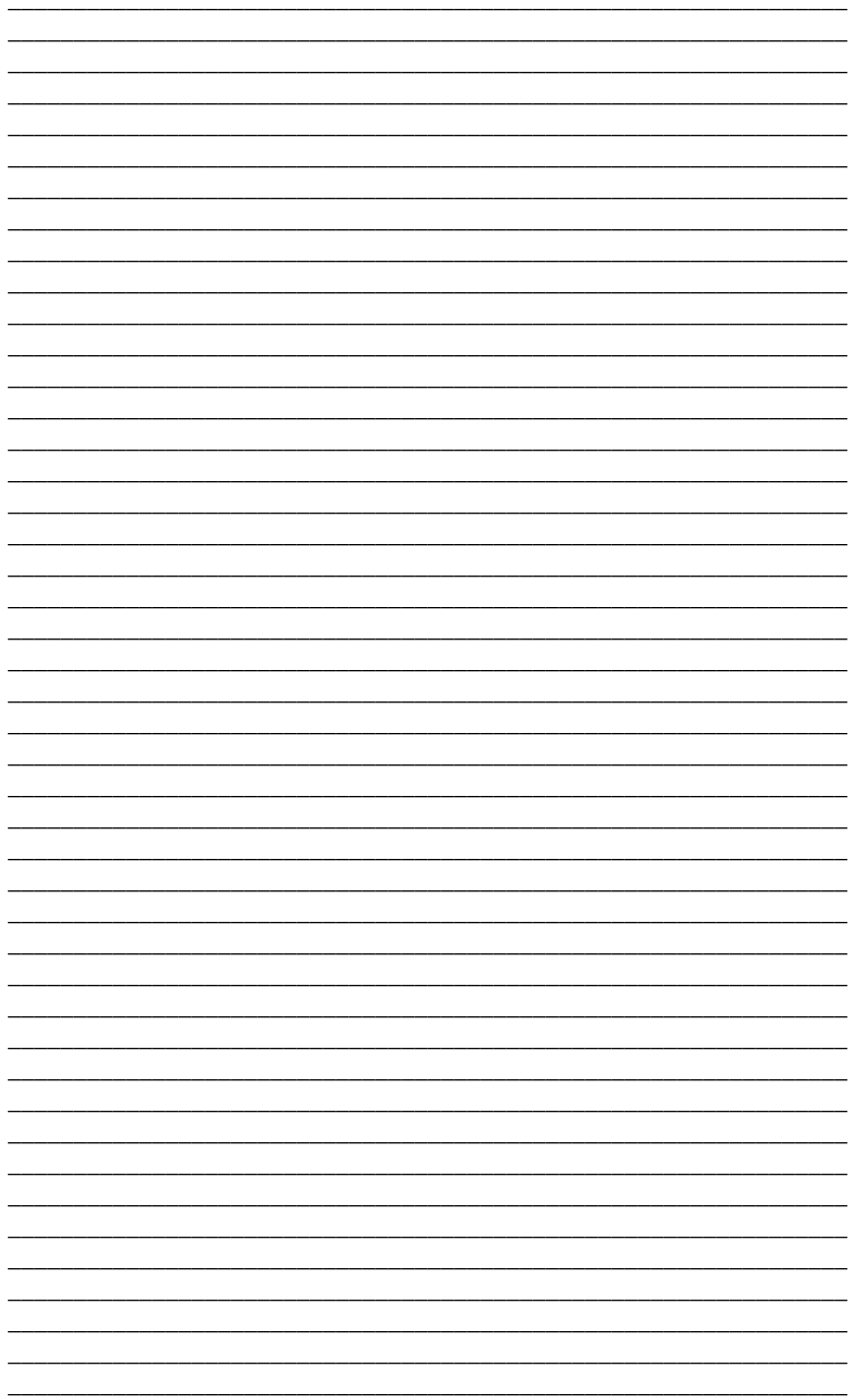
Free Radio hybridizes the idea of a sourdough starter and the notion that teaching someone how to fish is more valuable and resonant than merely giving someone fish.

Free Radio's ultimate goal is to publicly seed community development and training relative to radio broadcasting so as to make the notion of organizing a community to broadcast its voice something that is both more valuable and accessible to the public at large.

Free Radio will run at CUE Art Foundation beginning March 24 and continue until May 5, 2012.







ACKNOWLEDGEMENTS

CUE Art Foundation is a non-profit arts organization dedicated to promoting culture by supporting the creativity of under-recognized visual artists by offering comprehensive arts education programming for artists and students, and interdisciplinary arts events for public audiences.

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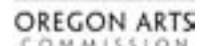
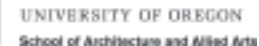
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