

Phase 1 Preservation Assessment

By David Seubert and Mona Jimenez, September 2003

The Pacifica Radio Archives is a unique and invaluable document of the history of America's first non-commercial radio network as well as comprehensive history of the American left.

With its current staffing and funding, the staff are doing an admirable job of preserving these materials for future generations of listeners and scholars. There are several areas where we see significant needs and/or recommend changes:

- **Space.** The PRA has a severe space crisis. The lack of space is hindering the staff from accomplishing their work. Most originals can eventually be stored offsite in cold storage, but until they are cataloged and transferred to new media, they cannot be kept offsite and still serve the needs of programming staff and listeners.
- **Cataloging.** Many Pacifica tapes are uncataloged and the current cataloging database needs modifications to improve its usefulness. Cataloging is time intensive effort and requires expertise in cataloging.
- **Remastering.** Pacifica has begun a remastering program to preserve aging and valuable programming materials on CDR media. Procedures generally conform to accepted archival practice, but all future copies should be made in duplicate, one for offsite archival storage and one for day-to-day use in the archives.
- **Logging of masters.** The PRA needs a database (or a module of InMagic) to log masters and preservation copies to aid in preservation planning and to track locations of masters and originals.
- **Online archives.** Neither open reel tape nor CDR are permanent solutions to archiving Pacifica's assets. The Archives needs to be developing long-range plans for the migration of the archives to a digital format stored in an online environment.
- **Paper archives.** Pacifica's paper archives are also a valuable document of Pacifica's history. While they may not serve the immediate need of staff and listeners, a plan for processing and preserving these materials is urgently needed.

With present staffing and funding not all of these are achievable, but these goals are all largely within reach of the Pacifica Radio Archives. The Archives is well managed, has a very dedicated staff and significant level of expertise. Increased staffing and financial support will be needed to take Pacifica from its present state to the level that these important historical materials merit.

During July 2003, consultants David Seubert and Mona Jimenez spent two days at Pacifica Radio Archives (PRA), which holds over 40,000 sound recordings from the 1940s to the present. The goal of their consultancy was to assess current operations and to make recommendations for actions that will ensure the long-term preservation of the holdings. Among the areas that were examined were:

- PRA's current collection policies and anticipated areas of growth
- The holdings of PRA including locations, environmental conditions, care and handling, formats, and descriptive information
- Systems, procedures and policies that impact the development and maintenance of the archive, and the longevity of the holdings

Overall, the staff is doing an impressive job of managing a very large volume of material with limited resources in an extremely tight space. Staff demonstrate an understanding of the basic requirements of an archive, even if they are not able to implement everything to the standards they envision. However, there is a strong foundation from which to build, a clear willingness to learn and adapt, and an undeniable dedication to the material and the progressive radio movement.

Pacifica's remastering/preservation program serves the dual purpose of providing access to archival tapes for the Pacifica staff and listeners as well as migrating the content off of old, decaying media onto more stable formats for preservation. Not everything is done to currently accepted practices, but the operation is very efficient and in the relatively short period of time that the staff have been migrating open reel tapes to CDR, a significant number of items have been processed.

PRA is poised to grow into a more professional archive. Data from old systems has been integrated into the existing computer catalog, and over half of the tapes have been entered. A cataloger will be hired in the near future, and it is hoped that additional archive staff will be possible in the near future. PRA has developed the technical knowledge necessary to make analog and digital copies available. Knowledge of the archive is growing among users, donors and funders, and staff are excited about prospects for projects that increase access to the very rich holdings.

PRA is, however, faced with a tremendous task ahead. Many of the materials are well beyond their shelf life and very fragile. Even relatively newer tapes from the 1980s are exhibiting the telltale signs of sticky shed syndrome and other failures, risking the loss of viable signals. The tapes are not well-described, making searching frustrating for staff and outside users alike. Environmental conditions are less than perfect on-site, and off-site, tapes are piled high in standard storage, putting the tapes at risk for future deterioration.

While the archival practices are generally sound, several changes should be made to the procedures—some relatively minor and some more substantial—but mostly doable without significant additional expenditure, staffing or changes in workflow. However, PRA cannot expect to improve its operations substantially without additional space. PRA's space problems are acute and are probably the single greatest impediment to the progress and efficient operation of the archive. There is no room for tapes of new source material and the backlog (particularly offsite) cannot be processed because of the space shortage. There is also insufficient processing area and no room to store new tapes that are created or brought from storage to be cataloged. Without additional space, it will become increasingly difficult for the Archives to manage their operation efficiently. As space

becomes tighter, staff will spend more time managing the space problem and less time actually preserving these materials.

Establish clear goals and priorities for long-term preservation, and separate the functions of archiving and preservation from the day-to-day work of access. Determining adequate space needs is an essential part of this process.

One immediate observation was that PRA finds itself, like many other independent media centers, focused on several different priorities that at times intersect and are at times quite different and have very different requirements. On the one hand, PRA serves the member stations and affiliates essentially as a source for programs and audio clips, and listeners and supporters for purchase of favorite recordings. To ensure funding and to get the material out, PRA undertakes productions that highlight what the archives have to offer, for example through creating premiums. These are both short-term activities that are focused on immediate access. At the same time, PRA seeks to function as a long-term archive, protecting the holdings from damage, wear and loss. This is a long-term view.

These are very different activities with different goals. Under present circumstances, staff are trying to attend to both. They cannot be as efficient in serving stations and listeners when they are also trying to act as archivists. Preservation details fall away in the hectic environment of production and duplication.

In order to establish priorities, conduct an overall count that will indicate the extent of the holdings by major areas of collection (such as national productions, premiums or member station productions), including date ranges, formats, and type of material (original recording, preservation master, user copy. etc.)

At the present time, work on the collection is driven primarily by production needs and requests from stations and users. It is not possible to know what tapes are at greatest risk, or those that have the greatest value. Doing an overall count will give PRA valuable information with which to do further planning. For example, it is impossible to tell if there are certain member stations whose programs are well-represented, and others that have few of their significant programs in the collection. Also, without an accurate count, it is impossible to estimate the amount of time it will take to process any one part of the collection, or to estimate storage costs.

Re-design the archive database to conform to common accepted practices for cataloging. A relational database will make archive and access functions interact without compromising the data needed for each activity.

There were several problems that were noted during our visit with regard to descriptive information about the archive holdings. The catalog field structure is lacking essential fields, data is incomplete in some of the records that do exist, and data entry has not been standardized. The problems with data make searching frustrating, especially for outside users. The catalog software InMagic is capable of much more than it is being used for. PRA is paying a premium for tech support that is not being utilized and for serving up

data for a price that may not be competitive. Further research is needed to determine whether or not PRA should continue with InMagic, and if a change is made, the best timetable for the conversion.

Several steps are suggested:

Find out true advantages and drawbacks to InMagic. We suspect that InMagic has features that make it useful in a library context, such as automating a relationship with library cataloging standards. Posting a question to the AMIA or ARSC listservs, or contacting a member of the Cataloging Committee at AMIA or ARSC may yield results. Also, Thirteen/WNET in New York is using InMagic. The archivist Daisy Pommer may be of some help - Pommer@thirteen.org. A well-designed catalog in a program such as FileMaker Pro may be adequate for your needs and be a better fit with other PRA functions.

Determine whether the hosting of backend InMagic database and the web search interface could be handled in a more cost effective way, and if a change will truly give better search functionality. A thorough analysis of technical options and costs will need to be undertaken, along with an analysis of search problems and their causes. It is possible that by adjusting the search interface one could get more out of the database, coupled with some basic data cleanup (see below). Consider the costs of the conversion and ongoing maintenance in terms of staff time as well as direct costs. It may be that staying with the InMagic host is a better option for the short-term.

Determine the feasibility of a new database that will meet shared needs between production, distribution and the archive. A relational database where basic data about a tape - such as title, date, length - is entered once and populates several modules, would be more effective. Each module would contain additional information entered by program staff in the course of their work. A relational database is a powerful tool if designed properly. However, the process of needs assessment, design and testing will take 6 - 9 months and will require the services of a database developer; thus, it will require a dedicated budget line.

Even if the development of a shared database is feasible and planned, PRA should hire a consultant (or the incoming Cataloger may have the skills) to make sufficient changes to the InMagic database to make ensure standard entries for key fields. ODI instructions must be written for field definitions and data entry, and several authority lists must be developed. General suggestions for improvements to the catalog follow at the end of this report. Independent Media Arts Preservation (IMAP) just finished a combined audio and video cataloging template that will be useful for reference. (It is not on the web site yet, contact IMAP at imap@imappreserve.org.) If one purchases the template, there is also a limited amount of technical assistance available from IMAP.

If possible, have InMagic technical support assist with global changes that will clean up data, give users a more satisfactory experience, and give PRA more relevant reports. Examples are:

- removing the word SERIES from the beginning of series titles so that users can alphabetize the series
- moving program titles that are in the series field to the title field (this may require some research as to whether these are in fact program titles)
- for Democracy Now!, moving the summary that is in the title field for recent programs to another appropriate field so that the title Democracy Now! will appear in the title field. (A convention for titling Democracy Now! will need to be developed; for example Democracy Now! followed by the date.)
- evaluate the restrictions field to see if the content contained in that field would be useful to users
- consider providing additional guidance to users as to the best way to search - perhaps defining the field contents on the help screen.

Additional general suggestions for improvements to the computer catalog are as follows:

- Develop glossary of both terms to be used in the catalog and terms that are used - they may be the same or may not.
- Make a determination as to how multiple copies and digital surrogates are cataloged - as separate items. Recording the existence of sub-masters on the box is not helpful.
- Need a way to track who entered data and where it came from (tape, box, paper records, folios, etc.)
- Data entry to be corrected immediately:
- Title consistency. Make a field for title as it is on the box and alternate title(s). Title is place for part # or program number within series
- Confine series field to series title only. Do not put the word series ahead of series name
- Consistency in data entry of date (should be able to have this as a preset for date fields)
- Add field for separate titles within a program (repeatable), and standard entry should include item number after title
- Add summary field; confine body field to log

Fields to be modified:

- Separate place of publication (and define it as geographic or organizational), publisher (define), and date. Need standard forms of entry for date, and to define what date this is (record date, first date of broadcast? date that is on the box?) Broadcast date could be repeatable.
- Define difference between broadcast length and program length once and for all!!
- Reel 1 of 2 is proper form - don't need 2 fields
- Define restrictions field and find existing definitions - change to pull-down menu
- Make ips a pull-down menu or authority list and add more options
- Make mono/stereo a pull-down menu or authority list and add more choices?
- Change label on cast to participants and/or make fields for common roles.

Fields to be added:

- Type of material - production oriented terms that tell where the item falls in the production chain
- Format field - use authority list!
- Generation field - use authority list!
- Add track configuration
- Add administrative actions: Condition notes, Preservation action notes, Remastered from, Other locations
- Related items field
- CD serial number
- field to track CD mastering and all preservation actions, including re-mastering date, equipment used, media brand, and special procedures such as cleaning or dehydrating.

Establish written end-of-project archiving procedures for all productions, including the following:

- As soon as a production is finished, master and production elements for in-house productions should be gathered for transfer to the archive. Currently, there is no system for ensuring that PRA productions become part of the archive. Masters for these productions are not systematically moved into the vault, and important production elements and related print materials are not archived, placing these materials at great risk.
- Add the archive number for source tapes used in compilations to the program list on the finished product and to the database record. There were several complaints about the lack of information in this area; it causes problems both for staff and users.

Improve care and handling of the collection through the following actions:

Marking CDs

CDs should not be marked on the surface, even with pens specifically designed for such purposes. CDs should either be left blank and the archive number written on the packaging or marked with the appropriate identifying numbers on the inner hub of the CD. If the CD is left unmarked, the serial number of the CD should be noted on the container in case the CD gets separated from its housing. The serial number from the CD should also be entered into the computer catalog in a field designated for that purpose.

80-minute CDs

PRA is currently using 80 minute (700 MB) CDs. 80 minute CDs do not meet the Red Book Standard, though they are compatible with nearly all players and readers. If possible, the archives should switch to using 74 minute (630 MB) CDs. However, this may not be practical as it is sometimes not possible to copy previously-made 80 minute CDs to 74 minute CDs. Staff should conduct tests to determine if the Telex duplicators

can copy from 80 to 74 minute CDs. If not, it is probably not worth the trouble to switch, which would require stocking both 74 and 80 minute CDs (for copying legacy recordings) or switching equipment. This is something staff will have to look into further.

Redundant copies and master/submaster separation

Staff currently make one CD copy of open reel originals (masters) which are called submasters. These submasters are then used for duplicating copies for listeners, Pacifica programmers or for fundraisers. These submasters receive a great deal of handling and are stored in a filing cabinet in paper sleeves. The issue of paper sleeves is discussed below, but the Archives needs to be making at least two copies of all archival material. The additional expense and time is marginal, but the added security would be of tremendous value.

The archive should switch to making a CD master on gold media (Mitsui gold or equivalent) which should be stored offsite. Unbranded, non-inkjet printable media should be used. Offsite storage would provide additional security in the event of a natural disaster, theft or damage. From this master, a second CD, on a different media (like the Taiyo-Yuden media currently used by the archive) would be made as a duplicating master or submaster. These would be stored onsite as is currently done and would receive the day-to-day handling for duplicating. They could be stored in paper sleeves or whatever is most economical and efficient considering PRA's limited storage space.

In order to achieve the goal of having one CD master per program, the archive should begin by making a second copy on gold media of all existing submasters. This copy will become the "CD master" and will be stored offsite as described above. As noted above, future transfers will be made directly to the gold media and the submaster can then be made from the gold master.

In general, all archive materials - original recordings/masters/preservation masters - must be separated from extra viewing copies, cassettes and CD submasters. Installing compact shelving for non-archive materials will help with space problems.

Jewel boxes

According to ANSI/PIMA Standard IT9.25-1998 (Imaging Materials - Optical Disc Media - Storage), CDs should be stored in a jewel box like container where the disc is suspended and the disc surface is not touching the container. Currently CDs are stored in paper envelopes that do not meet this standard. Master CDs should be stored in jewel boxes. If necessary for space, the submasters could be stored in paper sleeves.

Gold CDs

While there is not definitive proof that one CD dye formulation is superior to another it is generally accepted that gold CDs (phthalocyanine dye) have a greater longevity than conventional cyanine dye CDs. Research funded by the manufacturers have shown that longevity of gold CDs may be beyond 100 years. Regardless of whether this turns out to

be true, it is simply common sense to hedge one's bets and make multiple CD copies on different formulations. In the event that a particular formulation turns out to have problems, (or more likely that a particular batch of media is defective) the other set (whether master or submaster) would likely still be playable if on a different media.

Logging masters

A critical need for the archive is to track all submasters and masters in the computer catalog. The archive needs to be able to capture information about the mastering process as well as keeping track of what has been mastered to facilitate locating masters and having data for planning.

Increasingly, standards are being developed for machine-readable metadata that will follow a digital file regardless of the media it is stored on. Technical metadata on the masters would include mastering date, equipment and media brand. Metadata on the content should also be tracked to facilitate retrieval and planning, including title, date and archive number. This information will also allow PRA to report to the Pacifica board, listeners and others what has been accomplished and what remains to be done. Any metadata schema that is developed must be integrated with PRA's computer catalog.

Mastering to open reel tape

Currently, PRA masters program material to open reel tape. While this is in keeping with generally accepted archival practice, and does provide the redundancy of having the media on both an analog and digital format, it is probably not a viable preservation strategy for the long term. With the bankruptcy of EMTEC (BASF), there is only one manufacturer of open reel tape remaining (Quantegy). While it is likely that tape will be manufactured for many years as a boutique product, it will become more expensive as the market shrinks and the equipment is and will become increasingly difficult to buy and maintain. Furthermore, the archive has 40,000+ tapes that need to be copied and will need to have working equipment for many years for copying tapes.

The archives should begin planning for the eventual phasing out of copying onto open reel tape. Mastering on open reel is expensive, it takes substantially more storage space and open reel's demise is inevitable. This decision shouldn't be made hastily as it has served PRA well for years and is the reason that the Archive even exists and is in as good a shape as it is. It should however be in the planning stages now in the event that tape is no longer available or the machines become too expensive to maintain or archival practices moves completely away from open reel tape.

In planning the phasing out of open reel tape, the Archives may want to make the transition to an online repository of digital files. Planning a digital repository of sound files is beyond the scope of this report, but will likely be the direction the archive will want to move in the next 5-10 years. In fact, some of the programs such as Democracy Now! are currently pulled off of the Internet as digital files and then copied to open reel tape for archival purposes. This makes a certain amount of sense from a preservation perspective, but it is also backwards in that these "born digital" materials should be

archived digitally. This is akin to printing out email for preservation purposes. It may work, but it is fundamentally an inefficient process.

Becoming a digital repository will involve a system of redundant servers that do proper error correction and are safe from power failures. An expanded IT department would be needed. As an interim step, PRA may want to consider archiving some programs on open reel while phasing it out for other shows gradually, perhaps in conjunction with a pilot project on digitally archiving program some “born digital” program material. Also, partnering with another group that has significant IT resources may be an option.

Storage and handling of open reel tape Open reel tape should be leadered and labeled with the archive number to aid in identification of the tape and to protect the tape ends from damage.

Currently, open reel tapes are stored on NAB hubs without flanges. This is contrary to standard archival practice (see ISO standard 18923:2000 Imaging materials — Polyester-base magnetic tape — Storage practices) however, the expense of storing tape on hubs with flanges would be prohibitive and would cost several hundred thousand dollars to correct. Fortunately, the tapes are not stored on pancakes, but are stored in standard boxes and the hubs are "hung" on the ring inside the box so the tapes will not be damaged as they would be by storing them flat in boxes with Styrofoam separators.

The real catastrophe will be if (when) a major earthquake hits the archive. If a substantial number of tapes are thrown from the shelves and the boxes open, the tape will not be protected by flanges from coming off the hubs. It would be nearly impossible to untangle the tape if this were to happen to a large number of tapes. As a remedy, staff should either tape the boxes shut or use retaining devices such as bungee cords to keep tapes from coming off of the shelves.

Space planning

Likewise, audio archives grow much faster than other archives because of the redundant formats necessary to ensure the preservation of the content. The archive currently produces open reel, cassette and CD copies of the programs. We are recommending as well that they make an additional CD copy. With 40,000 open reel tapes, the archives will create 120,000 preservation and access copies. The space problem will only get worse as things are reformatted, but this redundancy is absolutely essential proper management of an audio archive.

Short of a new facility or additional space in the existing building, the archive will need to find a way to manage its space problems. The cheapest and simplest way may be to start moving open reel tapes that have been cataloged and copied offsite to a facility with climate controlled storage such as Iron Mountain Film and Sound Archive Services at Santa Monica, and Highland, Hollywood Vaults - or even the storage facility currently used in Van Nuys.

As tapes are not copied sequentially, there are gaps in what has been copied. This presents several problems, but they can be overcome. The archive could begin with a certain series of tapes (national programming for example) and copy an entire section and then move that offsite with the numbering sequence intact. It is recommended that the tapes be properly numbered and cataloged before they are sent to off-site storage. Both new and old numbers can be recorded in the computer catalog. PRA can move a substantial quantity (perhaps several thousand?) tapes offsite relatively quickly to make room for bringing back tapes from storage for cataloging and processing.

Improve care and handling of PRA paper archives

PRA's paper archives are at least as valuable as the audio archives, while not important to the programming of the station or the fundraising, they are certainly important to scholars and to future managers of Pacifica. Some of the paper records are not secured and are stored in the hallway while some are stored offsite. While they are not the priority of the archive based on use, the materials should be secured and an inventory created.

With a box level inventory, these would be ideal for off-site storage and could be retrieved based on the researcher's needs. Another option would be to find a home at a university that would take the time to properly process and provide access to the collection. While the Pacifica management would undoubtedly be reluctant to donate the archive, it might ultimately be in the best interest of the Network to have these preserved elsewhere. Pacifica has always been highly aware of its own importance and history and it would be tragic if their own paper archives were lost through neglect.

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