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Usability Evaluation of WGBH Stock Sales & Licensing Website

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I. Executive Summary

As PBS' largest producer of TV, web, and mobile content, WGBH has a large collection of material in its vaults (Abbot, 2017). Rather than leave the footage unused, the organization offers a variety of sites through which media producers can browse clips and, if interested, license them for use in their projects. When they have found their chosen clips, they may order the stock footage from the WGBH Stock Sales & Licensing website, which contains information on how to go through the ordering process, a search interface for rights-ready clips, and links out to other WGBH and American Archive of Public Broadcasting content..

Our team evaluated the Stock Sales & Licensing site, paying particular attention to the mental models users applied to search functions, browsing options, and the clip licensing process. After consulting with representatives from WGBH, we were particularly interested in whether or not participants understood the boundaries between the Stock Sales & Licensing site and other content sources, such as OpenVault and the American Archive of Public Broadcasting. Our initial consultation also highlighted WGBH's curiosity about whether or not the site led users to a clear understanding of the licensing process. We designed our testing scenario with these questions in mind, requiring participants to navigate across platforms and reveal their initial assumptions about the site as they were or were not confirmed.

Participants adopted the persona of a media professional licensing stock content, and we recruited individuals within our extended personal networks who had relevant media production experience. All sessions were conducted remotely with at least two team members present, using a consistent facilitator, with audio and the user's screen recorded. Each participant provided answers to pre-session questions that recorded their experience level, licensing needs and

behaviors, and characteristics of their ideal stock media site. Our testing scenario consisted of several guided searches. In the first, participants searched for a given term likely to produce results using the tool of their choice; in the second, they searched for a given term unlikely to produce results using the tool we believed them most likely to choose; in the third, they searched for a specific episode of a show with a “collection” on the homepage that is not available online; in the fourth, they searched for WGBH content only available through OpenVault. All participants answered a series of questions following their session, reflecting on their experience and revisiting their previous list of ideal stock licensing site qualities.

We have compiled both quantitative and qualitative results, comprised of task completion rates, errors per task, tabulation of common errors and the percentage of participants who made them, ratings of usefulness, satisfaction, and ease, and common comments. Overall, participants reported that the site was clean and appealing, but testing revealed difficulty navigating both the website and the institutional divisions between rights-ready, OpenVault, AAPB, and show-specific clips. Our recommendations include adding a shopping cart to simplify the licensing process, clarifying the boundaries between the above-named clip sources, sorting and labeling the collection tiles on the homepage, and offering an advanced search for rights-ready clips.

II. Introduction

The WGBH Stock Sales & Licensing website occupies a unique position, both within the network’s web presence and when compared to other paid stock footage solutions. Most WGBH sites are devoted to a particular series produced by the organization, such as *Frontline* or *NOVA*;

others like the American Archive of Public Broadcasting collect materials from a variety of PBS affiliates. With regards to stock footage sites, popular organizations such as Shutterstock and Adobe Stock create new content for licensees to tailor how they see fit. Stock Sales & Licensing differentiates itself from the other WGBH and stock footage sites by housing WGBH footage that had been previously utilized in station programming, in addition to being a centralized location for all policies regarding the licensing of footage from WGBH.

Despite the unique selling points of the site, Stock Sales & Licensing struggles with user retention. Of the approximately 3,000 searches conducted since the site's inception in 2015, users would spend an average of 1 minute and 7 seconds on the site before leaving. (C. Hudson, personal communication, October 4, 2017). A potential explanation for this can be found in issues of usability. If the user experience is more consistent and allows prospective licensees to more easily find what they seek, they may spend more time looking for footage in addition to informing other media producers about the site as a helpful resource. Additionally, the successful implementation of results may potentially indicate a direction that other public broadcasting stations seeking to monetize their audiovisual materials could follow.

III. Product Description

The WGBH Stock Sales & Licensing landing page is visually-oriented. A loop of assorted clips from different WGBH series plays, with a smaller "Three Ways To Find WGBH Content" section located to its right. This heading disappears quickly on resizing due to the website's responsive design. The three methods highlighted are "License Footage from WGBH Programs," a "Search 10,000+ Clips" search bar, and a link to "Search WGBH Archives and

more from WGBH Archives ‘Open Vault.’” “License Footage...” takes users to the How to License page, and the search bar initiates a search of footage that has already been digitized for use on the Stock Sales site.

The remaining 2/3rds of the landing page continues the trend of image emphasis. Below a “Find More Content In The WGBH Collections” header, a variety of categories are laid out. Each “collection” (as per the URL terminology) is dedicated to either a subject (examples include “Music,” “Boston”) or a specific series (“NOVA,” “Frontline”), with an accompanying image and sentence to further elaborate upon the section title. There are also collections dedicated to other WGBH sites which have footage on them, such as Open Vault and the American Archive of Public Broadcasting. The landing page also has a header and footer, with each being nearly identical; they include links to “About Us”, “Rates & Policies”, “FAQ”, “How to License [which brings users to the same page as ‘License Footage...’],” and “Contact Us.” The header differentiates itself from the footer by including two points of contact: a phone number and an email address.

Each collection page contains an illustrative photo as well as one or two paragraphs detailing the collection. If the collection is for another WGBH site, an orange “Visit website” button is present on the bottom-right corner of the image. To the right, there is a “Helpful Links” section that is similarly tailored to each collection. There is a drop-down menu above this section that allows users to get to a different collection without returning to the Stock Sales home page. Below the paragraphs are a selection of highlighted clips laid out similarly to the collection images on the homepage; if a user clicks on one of these, they will be taken to the clip’s location

at an external WGBH site. The bottom of the page (prior to the footer) contains an adapted version of the “Three Ways...” search methods from the homepage.

The “About Us” and “Rates & Policies” pages in the header/footer are mostly similar in how they lay out their content. Unlike the other previously covered portions of the site, there is a heavy emphasis on text - paragraph headings are given larger, bold text to differentiate from the bulk of their contents. To the right of the text, there is a “Browse WGBH Collections” drop-down menu that matches the menu present in individual collection pages. Unlike the other header/footer pages (which all have the drop-down menu), the “About Us” page is supplemented with “Helpful Links” below the menu; this once again mirrors what is seen in the collection pages. The “How to License” page is aesthetically similar to the aforementioned header/footer pages, although it presents its content as a numerical list of steps users must take to license specific footage that is unavailable online. Users may fill out a Google form on the “Contact Us” page, and “FAQ” enables navigation to a particular question on the page via hyperlinks. If a user clicks to an answer by this method, they must scroll back to the top (or hit ‘back’ on their browser) to return to the questions.

The final major portions of the site can be found when clicking through one of the “Three Ways...” links on the home page. “License Footage from WGBH Programs” takes users to the “How to License” page. If a user types a search term into the “Search 10,000+ Clips” bar with relevant results, they will find a series of clips with thumbnails. Mousing over a thumbnail triggers a brief playing of the clip, which pauses if the user mouses away. Below these thumbnails are the title of a clip as well as a button to download a watermarked version of the clip. If no results are returned, users arrive at a page with the statement “No results found for

your search,” along with a suggestion to modify their search. On any page within the search area, the search bar is replicated above the results and a suggestion to contact WGBH (at the Contact Us page) is provided as a link. Search terms are listed below this search bar, which users may remove at their discretion.

Clip titles in the search results are hyperlinked, and users can click through to find detailed information on the clip on the right side of a new page. The left half is covered by the clip itself, with a media player below it allowing for play/pause, going to a specific point in the clip for playback, fullscreen, and download functionalities. Below the media player, standard rates are detailed. The bottom of the page is dedicated to the “Three Ways” section familiar from other parts of the site. The final “Three Ways” link, “Search WGBH Interviews...”, takes users to an external site (openvault.wgbh.org).

IV. Test Objectives

This study aims to evaluate the usability of the WGBH Stock Sales & Licensing website and recommend modifications that would improve its users’ experiences. After consulting with our site supervisors at WGBH, we developed a plan to evaluate user interactions with and perceptions of their site. The site supervisors noted they were particularly interested in whether or not users understand the boundaries between different WGBH pages and in whether or not the site effectively communicates the content licensing process. We designed our testing materials to reflect these areas of inquiry.

V. Review of Related Research

Usability research directly related to content producer's stock sales websites is a fairly narrow field, so we reviewed literature pertaining to video content, e-commerce, and the design considerations impacting online archives in order to build background knowledge for our project. The WGBH Stock Sales & Licensing site sits at the intersection of these issues because its aim is to render archival footage findable and attractive for licensing purposes. Scholarship from archives and other content providers reveals the connections between commercial approaches to user convenience and evolving practices in digital GLAM (gallery, library, archive, and museum) repositories.

Usability for e-commerce

Our research into usability for e-commerce focused on the characteristics of effective searching and browsing functions as well as the difficulties inherent in presenting video content. Raluca Budiu (2014), Director of Research at the usability consulting firm Nielsen Norman Group, argues that while search tools are “vital and can save the day for those users who have well defined goals and a good understanding of the information space they are searching,” they are less useful and sometimes even frustrating to users unfamiliar with the content of a site (n.p.). Learning how best to utilize a search tool in a new environment can be difficult, and difficulty locating desired content can easily lead to lost sales.

A site's browsability proves similarly significant. In a pilot study of their proprietary visual navigation system, Hürst & Carvalhal (2017), describe existing site navigation systems as “commonly either simple but limited in functionality or powerful but complex and less engaging” (p. 39). Attempting to synthesize the benefits of attractive but simplistic visual

navigation (e.g. Netflix) and more robust but less engaging text-based navigation (e.g. IMDB), the team developed a system with a visually appealing “detail overview” that offered some of the types of information contained in IMDB text and omitted from Netflix description. Their study emphasizes the value of developing more flexible refinement strategies for simple, browsable interfaces.

Amy Schade (2014) of the Nielsen Norman Group emphasizes that this is particularly important in the case of video content, which “force[s] users to access the content sequentially: users need to patiently digest content in the order which it is presented without knowing whether what's coming next will be relevant to their needs” (n.p.). Users may or may not be willing to engage directly with video content at the time they are browsing, and sufficient, well-presented descriptive metadata is essential to their successful navigation of the site. This remains an important consideration whether they are searching for predetermined content, searching for indeterminate content, or browsing.

In their 2011 paper on integrating how website usability aspects influence e-commerce goals and outcomes, Green and Pearson found that usability is directly related to how likely someone is to make an online purchase. Particular aspects of website design that increased perceived use of an e-commerce website, like properly designed menus and search tools, easy to read fonts, and other such aspects, increased the amount of trust a consumer had in a website, and results showed that “the design credibility, content, interactivity, navigability and responsiveness [played] an important role in the online shopping experience” (Green & Pearson, 2011, p. 193). Increased implementation of usability concepts, it followed, could increase the number of purchases made through e-commerce websites.

Usability for online archives

In the context of an organization that produces and archives media, the trust indicator Green & Pearson describe is also of particular import. The ability to adequately link context and content is one of the core challenges of the archival profession and the foundation of trust for researchers. A trustworthy store is one that shoppers feel comfortable sharing their credit card information with and believe will deliver the advertised content at an agreed upon time. A trustworthy archive is one whose content researchers feel is accurately and adequately described, and thus worthy of consideration, remix, or citation in their own work. In brick and mortar repositories, context has traditionally been provided via a written finding aid that describes the content and provenance of materials within a collection. Much of the usability literature coming from online repositories therefore focuses on the best means of adapting finding aids in a digital environment. The search for a highly usable electronic finding aid is, at its core, a search for useful aggregate description on the web.

Tracy Jackson provides a succinct overview of these issues at the beginning of her award-winning paper on the usability of digital finding aids that integrate collection content. Jackson (2012) cites, “unfamiliar terminology, too much unnecessary information, too little pertinent information, confusion over what information is where in the document, and a desire to see the contents of a collection right away. Many users express frustration and a lack of desire to use the finding aid or the archive” (p. 23). In her subsequent study, she evaluates the usability of functions that provide both item-level and collection-level connections between textual finding

aid and digitized content. Jackson's study sought quantitative and qualitative feedback about user experience, specifically focused on the points of contact between these components.

She found that users with different levels of experience exhibited different desires and strategies when working with the test site, concluding that it may be best for UNC Chapel Hill to focus on serving intermediate and expert researchers via their finding aids, attracting and acclimating novice users through another point of access (2012, p. 71). This conclusion recalls another conclusion reached by Trace and Dillon: that a number of oft-cited usability problems with electronic finding aids are linked to legacy issues from paper finding aids (2012). In essence, that this is a genre problem. Digital environments complicate existing challenges to archival description and offer new opportunities to ameliorate them. They did not create these challenges so much as they created a larger population of independent users at a moment when the profession was reevaluating its approach to access, imbuing them with a sense of urgency.

Contemporary online archives are trying to address these challenges. In 2016, the New York Public Library launched a new interface for visualizing, discovering, and reusing online public domain collections (2017, n.p.). This distinctive portal offers users continuous scrolling of tiled images and served both to communicate the scale of publicly available digitization material and, with its aesthetic appeal, its ripeness for creative interaction. In a recent talk-turned-blog-post reflecting on this work, Josh Hadro describes his and his colleagues' efforts to ensure that the site didn't merely impress users, but engage them. As he puts it, analytics indicating traffic "[...] are just shadows on the wall compared to what we're really after, which is meaningful engagement with and use of the materials" (2017, n.p.). The library's mission extends beyond the issues of context preservation raised above – NYPL actively wants

users to recontextualize public domain materials for creative projects, particularly those projects that somehow build on the object's original context. This is highly relevant in a content licensing context, where content providers want another form of "deeper engagement" -- sales.

VI. Method

Our group surmised that the target audience for WGBH Stock Sales and Licensing includes media creators in a variety of mediums: TV, film, and web (which includes media created for sites like YouTube as well as social media). Users can also be divided into the genre they work in: fiction or documentary/news. With this in mind, participants were selected based on whether they were professionals in this field. Recruitment consisted of outreach within personal social media networks, direct e-mails to acquaintances who fit our persona, and a post on the Columbia University School of Journalism alumni blog. We considered additional recruitment via the Stock Sales and Licensing email newsletter, but due to issues of timing and our ability to find sufficient participants on our own, this possibility was rendered unnecessary. A persona was created based on our expectations of the user most likely to utilize the Stock Sales and Licensing page: one of a documentary producer that is searching for footage to license for a variety of projects. Based on our testing, we have also created a more detailed persona that may be useful to look at when considering future design changes. This extended persona is replicated below::

Jen is a documentary producer at a New England station who regularly releases 3-5 minute episodes about different natural and historical phenomena on a variety of web platforms, including YouTube and Facebook. Although she has access to the station's

facilities and equipment, she still has a relatively low budget and has to choose wisely when to take a crew out for location shooting. To provide some visual variety in segments, Jen occasionally relies on stock footage as B-roll. While she has used free stock footage sites in the past, Jen is frustrated by the vast array of options and need to search multiple sites to find footage that matches her criteria. Although she has considered other stock footage sites, their emphasis on general-purpose clips of people and places often make it difficult to find relevant footage for the subjects her episodes cover.

Group members and participants are geographically dispersed, so testing was conducted online using the GoToMeeting software. Participants shared their screens so group members could observe their movements from page to page and within individual pages. Although their webcams displayed their faces and body language during the test session, only the computer screen was recorded for the final mp4 video files. In lieu of a transcription, group members took notes on these videos to highlight successes, challenges, and noteworthy statements that emerged. Group members held post-session meetings to reflect on testing practices and discuss patterns that began to emerge as testing progressed.

Conducting test sessions online presented a unique set of challenges and opportunities. The aforementioned methods of gathering notes could not be further elaborated with data that could have been generated if the testing took place in a dedicated usability lab, such as eye-tracking and recording the number of mouse clicks for a given task. Technical difficulties occasionally emerged - in one instance, a participant had to use a roommate's laptop when their own would not properly record audio. Fortunately, such problems never completely derailed a

session. Conducting testing online allowed participants and group members to meet easily without having to worry about being able to reach a specified location.

The test session format used follows a typical path for usability testing, beginning with preliminary statements thanking the participant, explaining the content and objectives of the test, and assuring that the participant could leave without penalty if they felt uncomfortable. A pre-session interview follows, and is designed for the collection of demographic information based on the medium and genre categories touched upon earlier. Additionally, this interview determines how much experience the participant has in their chosen field, what their production roles are, and their usage habits with regards to where (and how often) they search for stock footage. The persona utilized for the main testing scenario matches the previously outlined initial persona of a documentary producer. The first tasks of the scenario deal with finding the Stock Sales & Licensing page, then navigating it and searching for footage. By the 5th question, the scope of the tasks has expanded, asking the participant to search for footage on other WGBH sites by following available links on the Stock Sales & Licensing page. These questions were designed to make the participant aware of the broader extent of WGBH stock footage sites, in addition to showcasing how many clips have yet to be digitized. By the end of the scenario, users were asked questions regarding rates and policies, which could be found by returning to the Stock Sales & Licensing site.

As previously mentioned, testing sessions occurred online. There were five total sessions, which took place between October 24 and November 8, 2017. Due to our group's differing schedules, there were only two sessions where all three group members were present; the others took place with two members present and the third writing down additional notes at a later time.

The project leader was responsible for the majority of participant recruiting, correspondence with site supervisors, and scheduling group meetings and testing sessions. They also served as note taker when the data manager was unavailable. The data manager took extensive notes for each session, transcribed notable comments and observations made by participants, and led the data gathering and analysis portions of the final report. The content leader coordinated the writing process for the testing scenario and the final project. They also served as interviewer for all five participants, which required them to deliver the testing scenario, prompt participants to think aloud, and weigh the ramifications of suggesting participants to explore an issue further. They were responsible for exercising this judgment with minimal in-the-moment input from colleagues observing the session. All three team members made substantive contributions at each stage of the writing and testing processes. Documentation was drafted collaboratively using Google Docs, and the team maintained shared folders containing the recordings and notes for each test session. Backup copies of the recordings were stored in GoToMeeting and on the project leader's hard drive.

VII. Measurements

Each test session was recorded, and during testing at least one researcher took live notes on the participant's comment and actions. In the weeks following the testing period, these recordings and notes were closely examined, with special attention paid to comments, errors, and specific actions. *Satisfaction* was measured by paying close attention to participants' comments and, as well as post-session session questions including survey questions using a seven-point Likert scale, with seven indicating that participants were very satisfied, and zero indicating that

participants were not satisfied at all. Metrics like how easy the site was to navigate, as well as how useful users found the site, were also graded on a seven-point scale. *Effectiveness* was measured analysing the number of errors participants made during testing, and task completions rates. Task completion was graded on a three-point scale using completion, partial completion, and failure as the three measures of completion. Completion indicates that the participant completed the task successfully, partial completion indicates the participant either completed only part of a multi-part task, or required assistance or prompting to complete a task, and failure indicates that a participant was unable to complete a task, or believed they completed a task but hadn't actually achieved that task's objectives. *Efficiency* was measured by noting the number of screens users had to navigate while completing each task, with special attention paid to how efficient those paths were. Specific types of quantitative information, such as time-on-task, were deemed either misleading or not useful in terms of proper analysis, as participants were heavily encouraged to think aloud, and at times intentionally stopped to do so.

VIII. Data Processing and Analysis

Following the testing period, each session's notes were reviewed and specific data points marked. These data points included completion rate, errors, comments, and points of noticeable confusion or dissatisfaction. In cases where the notes were not clear or detailed enough to make accurately mark a data point, the recordings were consulted. The recordings were also consulted to allow researchers to transcribe pertinent participant comments. Pre-session and post-session interview answers were extracted from notes into a single document, allowing researchers to get an overall impression of both participant demographics and overall feelings regarding the site.

Comments and errors were considered frequent when more than two participants made them, and comments from the post-session interview were included in this tally. Tasks were examined individually when three or more participants either failed or only partially completed them. During the individual examination of these specific tasks, errors and comments were individually recorded on a spreadsheet to allow researchers to see the exact point at which the participant failed, and to gather further qualitative data.

IX. Results

Demographics of Participants

Of the five users who took part in testing the WGBH Stock Sales & Licensing site, four regularly created video content and one regularly created audio content. All tests were conducted remotely and participants used their own personal laptops, four of which were Macs and one of which was a PC. Four participants accessed the site via the Chrome browser, while one participant used Safari. While each session was scheduled for one hour, session times varied depending on how long it took users to complete tasks, as well as how detailed their pre- and post-session answers were, averaging at around 40 minutes total.

Participants represented a wide range of experience, with two participants having less than two years of filmmaking or radio experience, one participant with two to five years of experience, and two participants with more than six years of experience. Despite this wide range, every single participant rated themselves as a five out of seven on a Likert scale pertaining to how comfortable they were searching for, and finding, stock footage. Our participants had worked in, or were currently working in, television, social media, and radio, most as producers

and most in documentary or news style, including one participant currently working at Al Jazeera.

None of our participants had used the WGBH Stock Sales & Licensing, though one participant had previously worked for WGBH. When asked what websites they normally used to search for stock footage, two participants reported they normally just used Google to find what they need. The other participants used a variety of sites including two who used the AP Archive, as well as YouTube, Wikimedia, Flickr, Reuters, NBC, and Shutterstock.

Quantitative Analysis

There were only three instances where a participant failed to complete a task. One user, after failing to find pre-digitized footage of Bill Clinton through the main search on the homepage, did not navigate to other WGBH websites to find additional footage options (Task 6). Two other participants failed to navigate to the Rates & Policies page when prompted to find information related to permissions and rights after deciding upon a clip they wanted (Task 8). All participants successfully navigated to the WGBH Stock Sales & Licensing (Task 1), conduct a keyword search and find pricing information of a specific clip (Task 3), and refine or expand their search results using the main search function (Task 4). Only one participant accurately evaluated what the homepage search bar was searching through (Task 2), and only one participant found information regarding policies and permissions without assistance (Task 8). Figure 1 below shows the rates at which participants completed, partially completed, or failed each task.

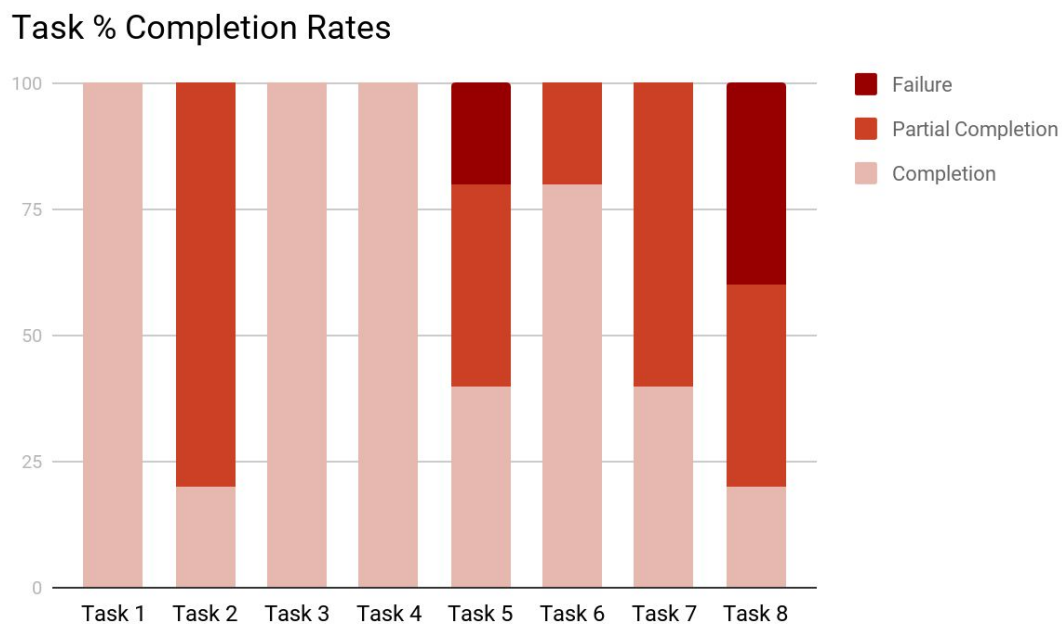


Figure 1. Distribution of task completion rates.

Despite the high completion rate, Task 6 tied with Task 2 for the highest number of errors. Every participant except for one, after looking over the Julia Child collection page, searched for and failed to find anything in the main search, causing confusion and frustration. The single participant who did not search for Julia Child footage this way commented that they found it odd that there was no search bar to search through the Julia Child collection's footage. Another participant clicked on the "The French Chef (footage)" link on the collection page, and, upon seeing they were re-directed to OpenVault, assumed that they had made a misstep and immediately clicked the back button in their browser.

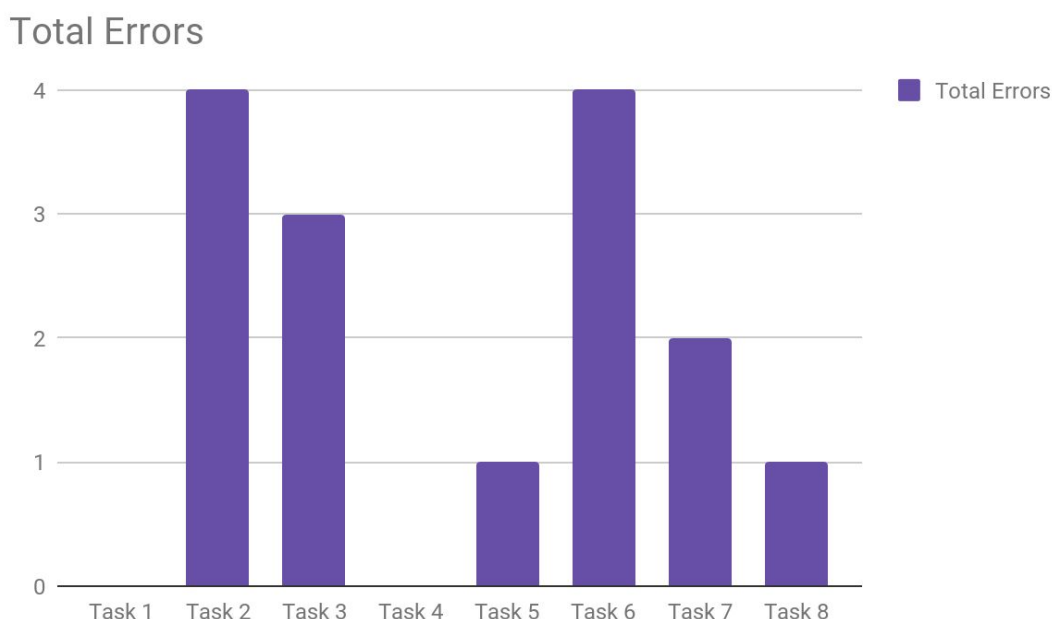


Figure 2. Total errors per task.

Task 2, which asked users to evaluate what users thought the main search was pulling from, also exhibited a large amount of errors, mostly stemming from the wide participant belief that the main search found on the homepage was pulling from all of WGBH's footage, including footage that would be found in the categories on the lower half of the homepage. In Task 8, which asked participants to find information about permissions and policies, two participants didn't navigate to the Rates & Policies page at all, while all but one of the others were unable to do so without assistance on behalf of the moderator. Two participants, after being redirected to OpenVault or finding no results for a search they performed, immediately opened a new tab and began to Google for footage elsewhere. A full account of common errors and the percentage of participants who made them can be found in Figure 3 below.

Error	% of testers who made error
Searched in the main search bar for Julia Child footage, finding no results	60%
Assumes the general search bar was searching through all WGBH content	60%
Started to Google for footage after hitting a roadblock	40%
Unable to find licensing information without assistance	40%
Mistook the dropdown menu on individual collection pages for a searchbar	20%

Figure 3. Errors and percentage of participants who made said error.

Satisfaction

Satisfaction appeared to be closely tied to the amount of inconvenience participants experienced while navigating to their end goal. Task 6, in which users searched for specific footage from a French Chef episode, and Task 7, in which users went through the licensing process of a clip found on OpenVault, had low rates of satisfaction. In both of these tasks, the benchmark for completion was contacting WGBH through phone or email to request the clip that they needed. Many of our participants did indicate that they would contact WGBH through one of these means, however, 60% of participants who completed Task 6 indicated verbally that they did not like having to freeform an e-mail, and the only two participants who completed Task 7 also indicated their dissatisfaction with having to make direct contact. One participant complained that having to e-mail in order to license the clip they wanted felt “unofficial,” one participant only decided to email WGBH because they were confused and unsure if WGBH actually had the clip the wanted, and two participants indicated that they would only contact

WGBH directly as a last resort after exhausting every other option, greatly reducing the perceived efficiency of the site.

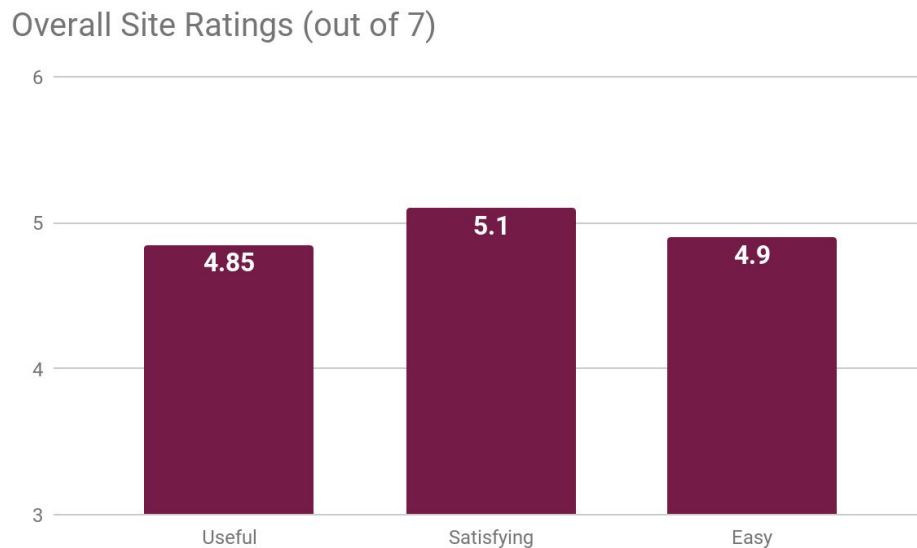


Figure 4. Usefulness, satisfaction, and ease of use ratings.

Overall satisfaction was middling, with the average satisfaction rating coming in at a 5.1 out of 7 when participants were asked in the post-session interview. Two participants commented in that while some actions were simple and easy, like general clip browsing and determining whether a pre-digitized clip would be appropriate and useful for a project, finding specific footage was difficult. One participant went so far as to rate these two actions separately—they rated general browsing as a 7 out of 7, while they rated searching for specific footage as a 4. It should be noted, however, that despite these issues, every single participant, when asked if they would recommend the WGBH Stock Sales & Licensing site to a fellow filmmaker, answered that they would, with only one participant giving the caveat that they would only do so if the fellow filmmaker is looking for general, non-specific footage.

Qualitative Analysis

Specific tasks with either large error rates or low completion rates were targeted for further study. Tasks 5 and 8, for their low completion rates, Task 6, for its high number of errors, and Task 2, which had a low number of completions as well as a high number of errors, were all closely examined. Tasks 5 and 6 both involved users looking for specific footage that could not be found through the general search, one clip, of a French Chef episode, was meant to test participants understanding of collections, while the other was meant to encourage participants to explore other WGBH sites for footage. Task 2 asked participants to search in the main search bar and evaluate what they were searching, while Task 8 asked them to go through the process of securing clip rights and reviewing policy.

The main issues users had finding specific clips appeared to come from a fundamental misunderstanding of what footage was ready and available through the WGBH Stock Sales website. Two participants commented, upon first reaching the site, that they with the search bar was larger and more prominent, as it was the only thing they were really interested in, and, as part of Task 2, all but one stated that they believed that the search was pulling from all WGBH content, one participant, when looking over the “Three Ways to Find WGBH Content” box, immediately stated that they did not understand how OpenVault was related, and that they were afraid they would not be able to license clips off the Stock Sales site.

As part of Task 5, one user, after finding zero results for Bill Clinton in the rights-ready clip search, immediately began to Google for “Bill Clinton Stock Footage,” visiting clip sites like Shutterstock before seeing mention of Clinton on Frontline and returning to the site. Many participants flipped back and forth between browsing OpenVault, the Stock Sales site, and

another site like Frontline homepage, and only one user very quickly made their way to OpenVault and began searching there. Task 6 had similar issues. Though every single participant first navigated to the Julia Child collection page, 60% of participants stated that they were unsure what WGBH owned and could not tell if the episode they wanted was available, and 60%, after looking for a search bar on the individual collection page, performed a failed search for footage in the rights-ready footage search. During Task 8, participants expressed dissatisfaction with having to contact WGBH, and even in cases where they started from a rights-ready clip on the Stock Sales site, most participants had to be prompted to look for further permissions details on the Rates & Policies page, and one participant commented that they wished there was just a “request” button on the page of every clip.

Comments from the post-session interview also largely focused on these problematic tasks, and exhibited the high number of participants who did not understand the connection between the WGBH Stock Sales site and other WGBH sites, specifically OpenVault. Many participants also felt that, while it was easy using the search bar to browse through general clips, it was difficult to find specific clips or episodes that they already had in mind, like searching for specific Bill Clinton footage, or a single early episode of *The French Chef*. One user commented the following when asked what parts of the site they found most confusing:

“Bouncing from Stock Sales to OpenVault, and... um, feeling like the two were not connected... and other wormholes that I found myself in trying to crawl out of, to get back where I was to get videos from my documentary. It was a little hard. So, I would say, staying in Stock Sales—I don’t need to go in like, portals, I just need my [bat footage], to download it, and put it in my video because there are bigger fish to fry.”

Multiple participants found the disconnect between seeing certain categories on the front page, like Julia Child, and then find no results related to those categories when searching to be confusing. “The searchbar implies that you should be able to search the site. It seemed like you could only actually search certain types of footage,” one participant said. They felt this information should be made apparent on the search page itself, otherwise, when getting a zero results page for something the participant knows WGBH owns, “I’m going to be sitting there like ‘why don’t you have this thing!’” This same user noted that, had they not already been taken to OpenVault in a previous question, they would have probably given up and just assumed WGBH either didn’t own or didn’t have the footage in question.

Overall, the three most common comments made by participants throughout the testing sessions were that they did not understand the relationship between OpenVault and the WGBH Stock Sales website, that they wished they could search through an individual collection’s footage, and that they were unsure that Julia Child footage WGBH owned and had available. 60% of participants made each of these comments. Additional comments can be seen in Figure 5 below.

Comment (from Session or Post-Session Interview)	% of testers who made comment
Does not understand the relationship between WGBH Stock Sales site and OpenVault	60%
Wishes they could search through an individual collection’s footage	60%
Unsure what Julia Child footage is available to license/ what WGBH owns	60%
Wishes the general search bar was more prominent	40%
Wishes there was an advanced search	40%
Wishes the keywords on an individual clip’s page were links	40%
Does not like being bounced between sites	40%

Found it easy to search for clips on general topics, but hard to find a specific clip they already have in mind	40%
Wishes there was a "Request" or "License Clip" button on an individual clip's page	40%
Wishes that if the general search bar doesn't return a result, but WGBH may have related footage elsewhere, that it would say so on the results page	40%

Figure 5. Comments made during testing.

Note: Comments only included in this table if more than 40% of testers made them.

Heuristic Review

Following the testing period, but before conducting in-depth analysis of the collected data, the researchers performed a heuristic evaluation of the WGBH Stock Sales & Licensing website using Nielsen's ten usability heuristics. This evaluation found that the site, while aesthetically pleasing, had organizational design flaws that could prevent users from finding the footage they need. Homepage construction suggests that the rights-ready search box is the primary search tool, but unsuccessful searches do not obviously redirect users to OpenVault or create the impression that there could be relevant content elsewhere. Users came across similar issues, leading to frustration when the search returned zero results and they knew WGBH should have the footage they need. Keywords are listed on individual clips, but are not shortcuts, forcing users to re-type this information if they want to narrow down a search. Users also often have to navigate away from the WGBH Stock Sales & Licensing site in order to continue searching for footage they need, whether they are directed to OpenVault or another site. The fact that users have to contact WGBH by either phone or email to license any clip is a major barrier that discourages users and could push them to other sites where it's easier and faster to acquire

similar footage. The complete heuristic review, as well as a copy of Nielsen's ten usability heuristics, can be found in Appendix C.

Content Inventory

We also conducted a content inventory using the spreadsheet template provided in compliance with that assignment. The inventory separates elements of the main Stock Sales & Licensing page into four distinct sections, the top navigation bar, above the fold content, below the fold content, and the bottom navigation bar. For more information about our exercise, please see Appendix D.

X. Interpretation of Results

As previously noted in relation to the Julia Child question in Task 6, participants had difficulty parsing the relationships between different tiles on the Stock Sales & Licensing homepage. We view this as the result of mixing twelve tiles that represent additional sources of content, subject guides, and show-specific pages. Though only one participant articulated it in this fashion, stating: “I was a little confused at first about the differentiation between shows and types of thing on the front page [...] if there were subsets of a thing within larger categories or not,” we posit that this organization is tied to the high rates of error for Task 6 across the board.

Our post-test experiences conducting a heuristic evaluation and assembling a content inventory proved useful supplements to our test-related data collection. We completed these exercises between the end of testing and the beginning of earnest analysis, which meant we approached them familiar with the site, aware of the difficulties our participants had faced, and having discussed the patterns emerging from those difficulties. The severity scores from our

heuristic evaluation highlighted the same difficulties with frequent need to navigate away from the site, insufficient redirection following a “no result” search, and the expectation that the primary search bar connected users to a much more comprehensive pool of results. These scores supported our inclination to organize our recommendations around those issues and the process helped us articulate ideas we had previously struggled to name, like participants’ difficulty categorizing the tiled links on the landing page. Our content inventory largely echoed the previous findings, though it did lead us to consider the effects of page order in the top navigation bar more closely. When discussing our recommendations for the final report, we declined to include the suggestions about link reorganization made in the inventory feeling that its benefits will likely be realized via our recommendations to add a shopping cart and design for clearer boundaries between distinct sites.

XI. Recommendations

Based on our findings, we have five initial suggestions to make as a starting point for mitigating the most egregious usability issues. Wireframes for each recommendation can be found in Appendix E. Our first suggestion is to include a link at the landing page to another page, which will explain what WGBH Stock Sales & Licensing is and how it relates to the other WGBH sites that are linked on Stock Sales. We will be making other recommendations with a similar goal as an alternative for users who do not click through here.

One issue that frustrated users related to the abrupt nature with which the licensing process requires contacting the Stock Sales & Licensing team. To ease users into this endpoint while still accommodating the necessity of clearing rights with the staff, we propose

implementing a “Shopping Cart” feature. Like any e-commerce site, users may add items to their cart - in this case, we would implement the button on individual clip pages. When the user is ready, they may proceed to checkout (with the functionality being included in the header, next to existing Stock Sales contact information). At this point, there will be a email form that users must fill out to complete the licensing process.

Our next suggestion ties into the previously-mentioned need to clarify the different sites that make up WGBH, in this case with relation to the existing “Find More Content in the WGBH Collections” section at the bottom of the site’s landing page. Currently, the section includes portions dedicated to specific subjects as well as external WGBH pages. Splitting these into two discrete sections (with subject pages containing only rights-ready clips available on Stock Sales) further informs users of the differentiation between WGBH sites while maintaining the strong visual identity that is currently a strength of the Stock Sales site.

Another method that can assist users in finding rights-ready clips that are already available is to implement an advanced search functionality to supplement the existing search tool. In addition to feeding into one participant’s expectations of such a feature being already present, adding advanced search parameters will feed into existing metadata (such as tags, aspect ratios, and shoot date). Although we are aware that this particular recommendation may carry a significant development cost, the fact that such metadata is already present will hopefully minimize any issues with implementation.

Finally, we recommend adding a popup that will appear upon a user’s first attempt to click-through to a clip or page that exists on a WGBH site other than Stock Sales & Licensing. The user will be informed that they are leaving the Stock Sales site, and told to return after

taking note of any relevant information required for ordering a clip. There will be a checkbox that allows for disabling of this popup, easing the process for repeat visitors. While we understand that popups are perceived as annoying and intrusive, the frustration by users at this stage will be less than what they would face with the confusion of entering new sites with different layouts and no warning. As previously mentioned, a mockup of each recommendation presented here is available in Appendix E.

XII. Conclusions

The WGBH Stock Sales & Licensing usability study was able to gather a sufficient amount of data from the site's targeted user group—filmmakers and media producers. The researchers are confident that this testing uncovered key design and organizational problems and that the recommended changes should have a positive impact on site usability. If WGBH implements the recommended changes, further testing is recommended to measure the impact of the changes and detect any further issues. Finally, this study has contributed to the understanding of, and literature surrounding, the usability of video archives and video licensing websites, helping to further the understanding of the connection between design, organization, and website ease of use.

XIII. Bibliography

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XIV: Appendix**Appendix A:*****Usability Test Instrument*****Pre-Session Interview Script**

Thank you for agreeing to help us out in testing the usability of WGBH Stock Sales & Licensing's website. We're Lindsey, Alexa, and David. Our main purpose here today is to determine whether the WGBH Stock Sales site as it currently exists is easy to use, whether you'd find it helpful for your production needs, and if the many ways in which one can obtain footage from WGBH are accessible.

For this session, we're going to observe how you interact with the site while performing specific tasks we will outline for you. In this session, you will be sharing your screen using the GoToMeeting software. To do so, you will click on the center button in GoToMeeting with a monitor symbol once we tell you. **This is not a test of your knowledge** - if you're unable to complete a task, you will not be penalized in any way. None of the data we are gathering will be directly tied to your name - you will remain anonymous. If you feel uncomfortable at any time, you can leave the session without consequence. Do you currently have any questions? Then let's begin. We will make you the host in a moment, at which point you can start sharing your screen.

Pre-Session Questionnaire

1. How many years have you spent in a media or news production environment, either academically or professionally?

<2 years	2-5 years	6+ years

2. Do you work primarily in film, television, or web/social media production?
3. Is the work you mainly do fiction or documentary/news?
4. What is the average running time of the projects you work on?

5. What is typically your primary role(s) in a given production? (i.e. director, producer, editor)
6. How often do you find yourself searching for stock footage on projects?

Never	Once a year	A few times a year	Once a month	Several times a month	Weekly	Daily

7. Do you use other forms of stock media in your projects? (i.e. photos, music, sound effects)
8. If so, how much do these other media formats appear in your projects relative to the amount of stock footage?

None	Very little	Some	Similar/equal	More

9. Have you ever used the WGBH Stock Sales site? What about other WGBH stock sites?
10. Which stock footage sites do you usually rely on? List up to 5.
11. On a scale of 1 to 7, how would you express your proficiency in searching for stock footage that is relevant to your needs? Please select a number, with 7 indicating that you are extremely proficient and 1 indicating that you have great difficulty in finding footage.

1	2	3	4	5	6	7

12. What does your ideal stock footage site look like in terms of its feature set?

Scenario for Usability Testing

During this remote exercise, you will locate and explore the WGBH Stock Sales and Licensing website. This interview is designed to evaluate the structure and content of the website, not to assess your performance as user. Please imagine that you are a documentary producer seeking to identify and license audiovisual materials relevant to several projects you are working on. Follow the prompts below to move through the search and licensing processes, thinking aloud as you go. We will benefit greatly from hearing your hypotheses, decision making processes, and/or points of frustration throughout the process.

1. Goal: You are planning a new nature documentary and would like to identify and license relevant clips from WGBH to supplement your own footage.

- a. Task: From a newly opened browser, how would you navigate to a website that allows you to do this?

-
- i. Sub-task: On a scale of 1 - 7 where 1 is very difficult and 7 is very easy, how difficult or easy was it to find a relevant webpage?

1	2	3	4	5	6	7

- b. Criteria: Success = arrival at <http://www.wgbhstocksales.org/>

2. Goal: You would like to begin searching for clips containing bats, so you will evaluate and identify the appropriate search tool(s) on the site.

- a. Task: Please explore the page without clicking on anything yet and describe your initial impressions. _____

- i. Sub-task: Where on this page would you begin your search?

-
- ii. Sub-task: What resources do you think are included in the pool your results will come from?

-
- b. Criteria: Success = Choose a search tool and name at least one assumption about the extent of the collections it will search.

3. Goal: Having chosen a search tool, you will begin conducting keyword searches relevant to your nature documentary project.

- a. Task: Enter the term *bats* into your search tool of choice. _____

- i. Sub-task: Identify a clip of interest for further investigation.

 - ii. Sub-task: Review the information provided about this clip. How much would it cost to license? _____ How would you go about licensing it? _____
 - b. Criteria: Success = Click on a clip and identify pricing and ordering information.
4. Goal: You've found a great bat clip and would like use the information you have about it to find additional related clips.
- a. Task: How would you find additional related clips?

 - b. Criteria: Success = refines or expands search using any WGBH search tool
5. Goal: Now, imagine that you want to find footage of Bill Clinton.
- a. Task: In the Stock Sales search bar, search for *Bill Clinton*. What do you see?

 - i. Sub-task: Where would you go next to look for a clip like this? Give it a try: _____
 - b. Criteria: Success = uses AAPB, OpenVault, or similar link on the Stock Sales site to locate wider range of WGBH collections
6. Goal: Next you would like to license footage from a specific program, in this case the suckling pig episode of Julia Child's first show, *The French Chef*.
- a. Task: From <http://www.wgbhstocksales.org/>, where would you go to find information about Julia Child's work available through WGBH?

 - i. Sub-task: From <http://www.wgbhstocksales.org/collections/julia-child>, what of Child's work is available from WGBH? _____
 - ii. Sub-task: How can you determine whether or not clips from the suckling pig episode are available for licensing?

 - iii. Sub-task: Which search tool seems the most useful for this task?

 - iv. Sub-task: If unable to locate this clip online, what will you do next?

 - b. Criteria: Success = found link to Julia Child collection independently; named OpenVault as most useful search tool; determined clip is not online; decided to contact Stock Sales & Licensing staff

7. Goal: For this next step, you have decided you would like to license the following clip of jazz musician Cannonball Adderley:
http://openvault.wgbh.org/catalog/V_886AA1D83E12475BBE31095295CF7B9D
- a. Task: Where do you go to find more information about how to order it?

 - i. Sub-task: Walk us through the steps you would need to take to order the clip you want.
 - b. Criteria: Success = clicks through “license clip” button, goes back to Stock Sales and Licensing and navigates to “How to License” page, or identifies team’s contact information
8. Goal: You found the footage you need, and it’s already digitized. Now you want to secure the rights and get the unwatermarked clip to add to your project.
- a. Task: What are the standard rates for a clip in Standard Definition and High Definition, and what are the the rates for a master version of the clip?

 - i. Sub-task: Is there anything else you need to do before you can add this footage to your project?
 - b. Criteria: Success = finds rates (either on Rates & Policies page or from recalling that the info is available on the page for any given online clip); points out source disclosure and/or permissions information from Rates & Policies page

Post-Session Interview Script

Thank you for meeting with us today, and for working with us to complete these tasks. We will now be moving on to a brief, post-session interview where we will be asking you some questions regarding how useful you found the site to be during the session. We encourage you to freely express your thoughts here--there are no right or wrong answers.

Post-Session Questionnaire

1. Overall, how useful did you find this site in aiding you to complete today’s tasks? Please select a number, with 7 indicating that the website was very useful, and 1 indicating that the website was not useful at all.

1	2	3	4	5	6	7
---	---	---	---	---	---	---

--	--	--	--	--	--	--

2. On a scale of 1 to 7, how satisfied were you with this site? --with 7 being that you were extremely satisfied, and 1 being that you were extremely dissatisfied.

1	2	3	4	5	6	7

3. On a scale of 1 to 7, how easy was this site to use? 7 --with 7 meaning the site was extremely easy to use, and 1 meaning the site was extremely difficult to use.

1	2	3	4	5	6	7

4. Which site features did you find most confusing? Please try and give specific examples.
5. Which site features did you find easiest to use? Please try and give specific examples.
6. On any given clip's page, was there sufficient format information to determine if it would fit a given project's specifications?
7. Were there any site features you expected to find, but weren't there?
8. Would you recommend this site to a fellow filmmaker?
9. Was it clear to you that the clips on the site were only a sampling of all the clips available through WGBH?
10. Before we began our session, we asked what your ideal stock footage site would contain. Did the WGBH Stock Sales & Licensing site live up to those expectations?
11. Do you have any other questions or comments regarding the site or your experience here today?

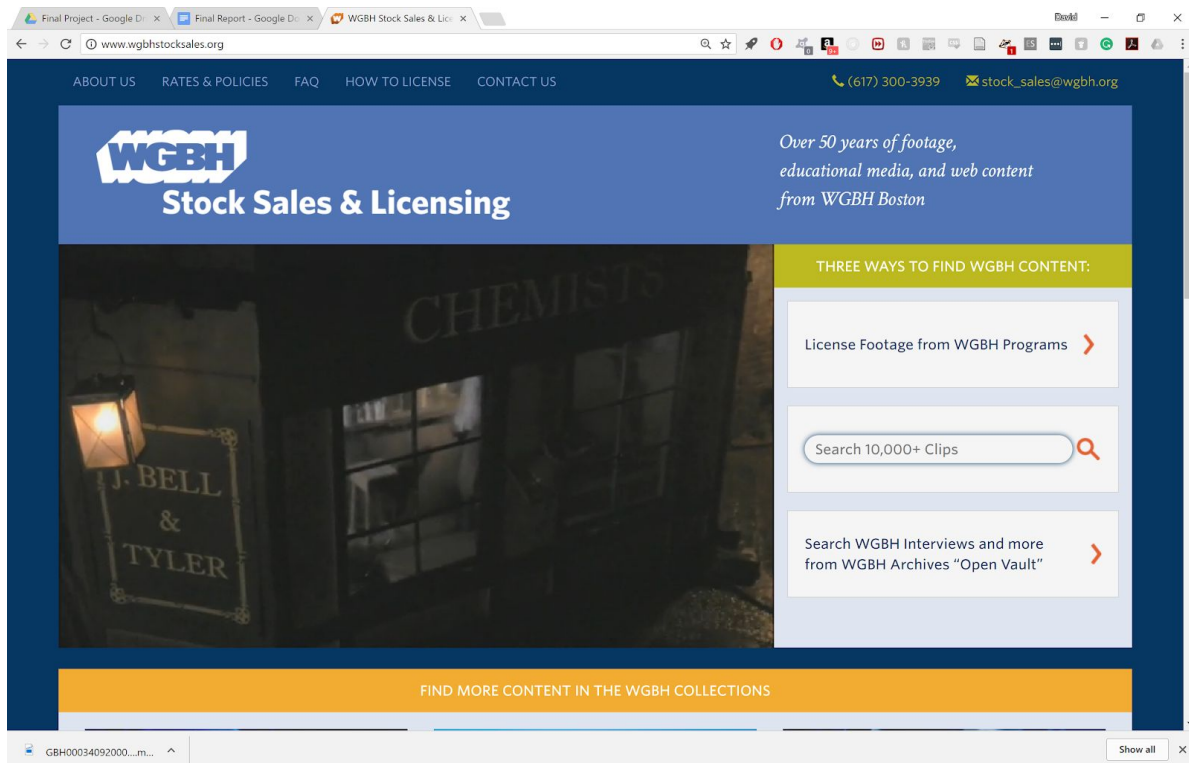
Appendix B:***WGBH Stock Sales and Licensing Website Screenshots - Refer to Section III for Detailed Description***

Fig. B1: Top third of landing page

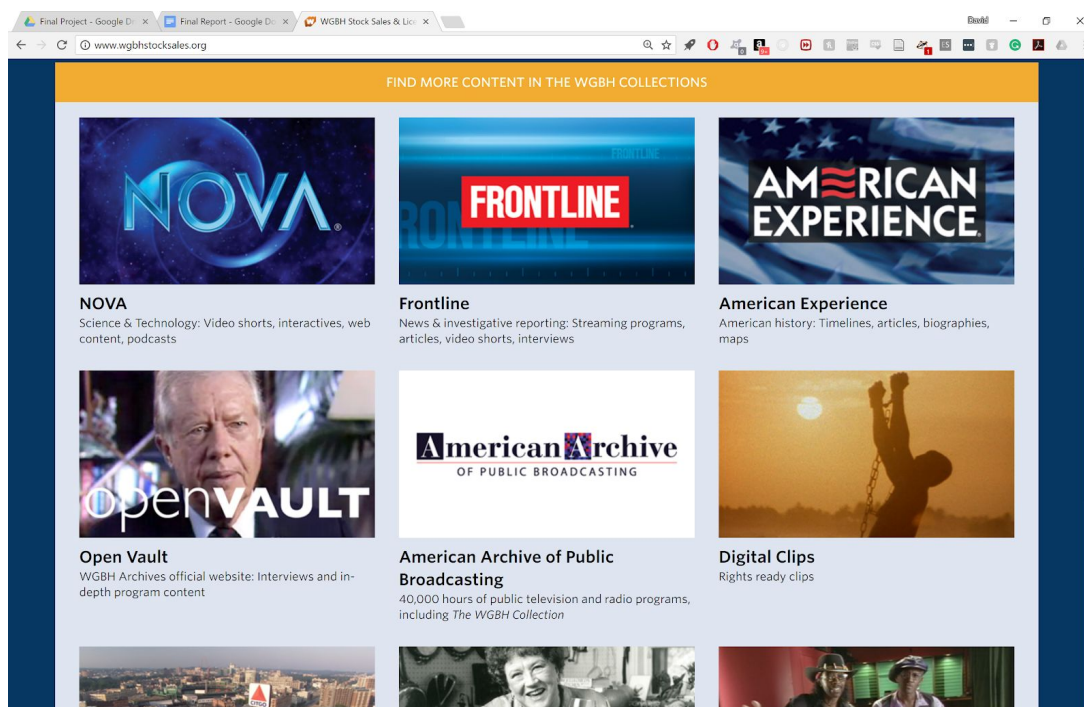


Fig. B2: Middle third of landing page

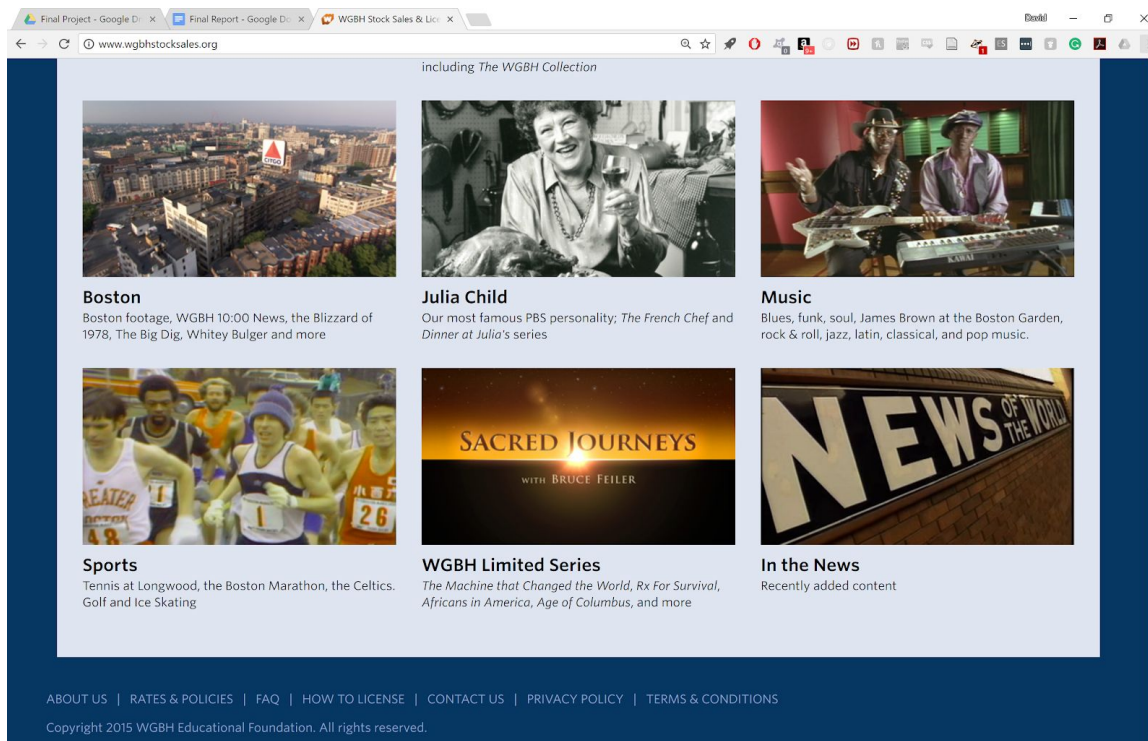


Fig. B3: Bottom third of landing page - note the unchanged copyright year

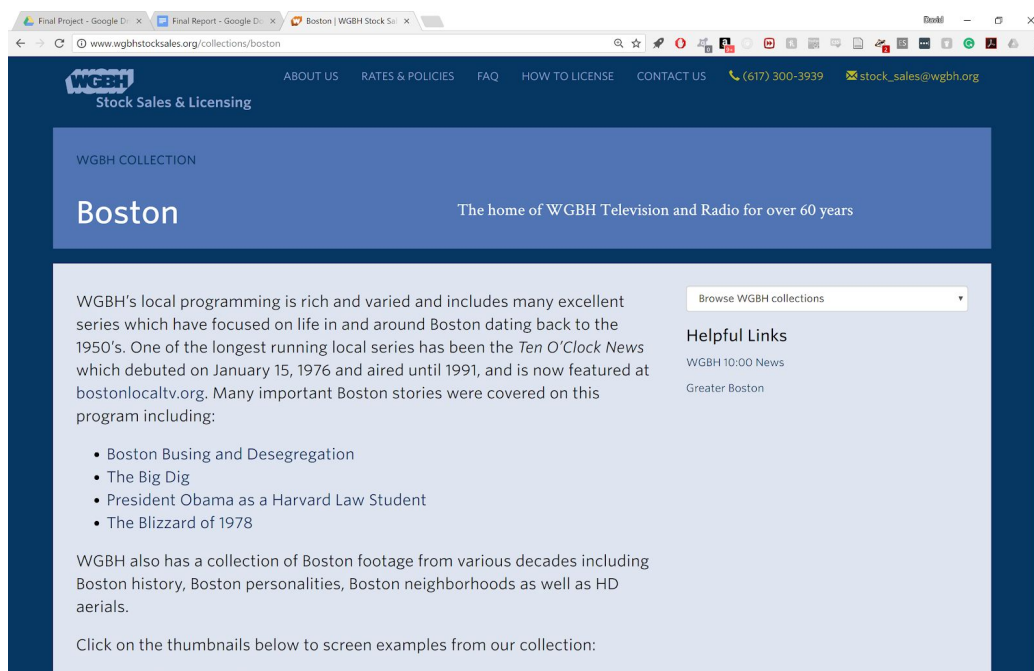


Fig. B4: Top half of “Boston” collection page - refer to Section III for details on similarities/differences between other collection pages

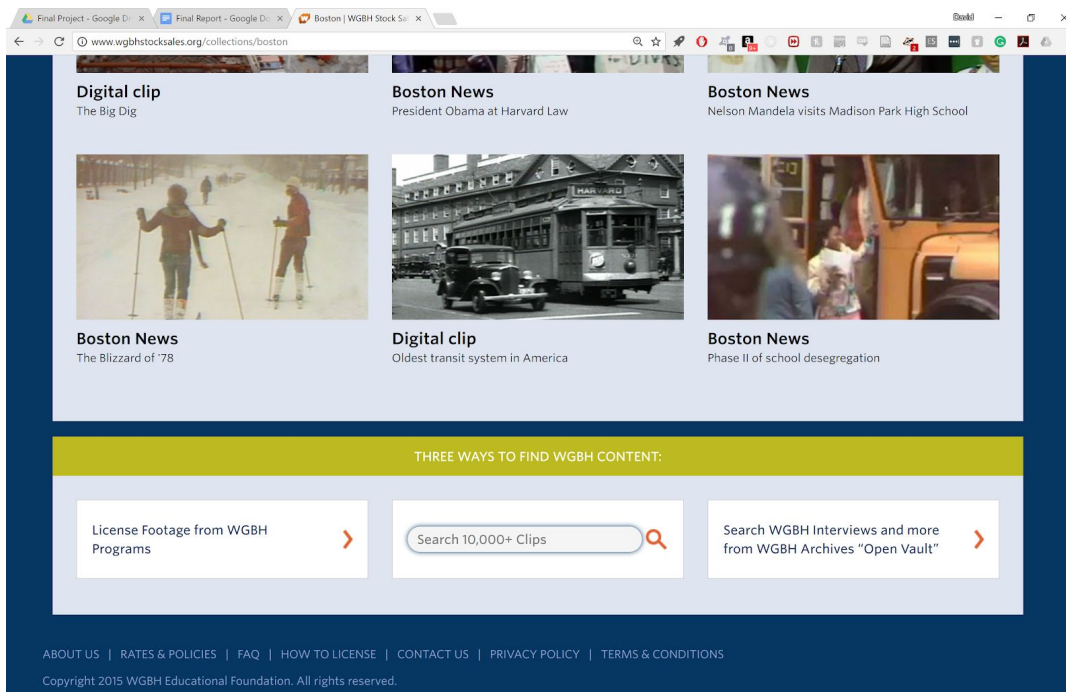


Fig B5: Bottom half of “Boston” collection page

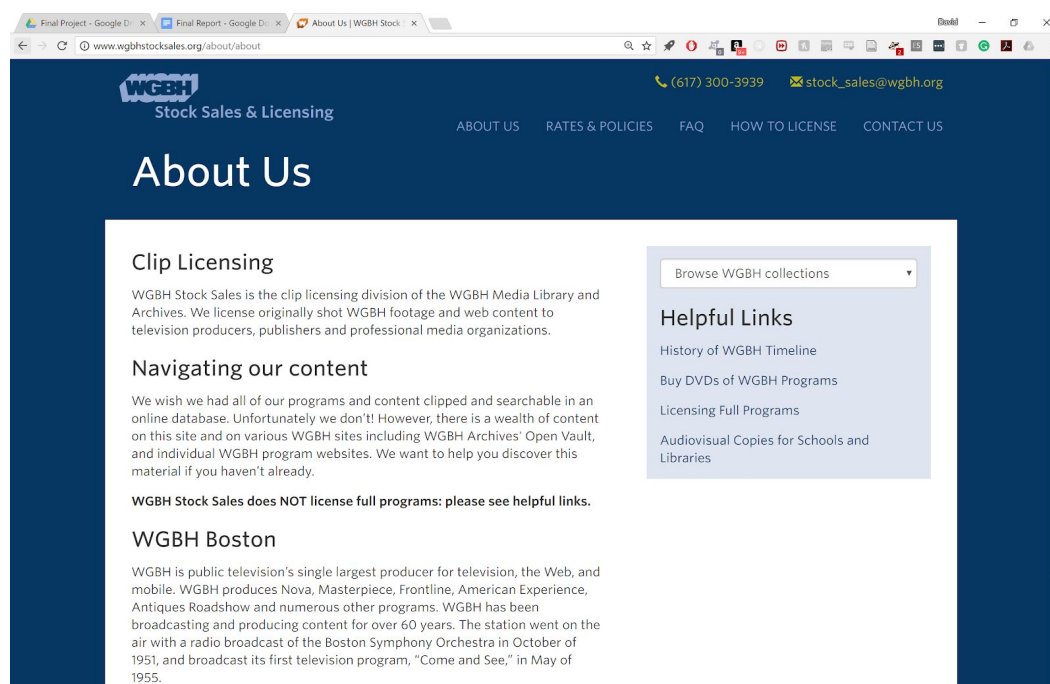


Fig.B 6: The “About Us” page from the header. Other pages are similarly laid out, although the “Helpful Links” section is unique to this page.

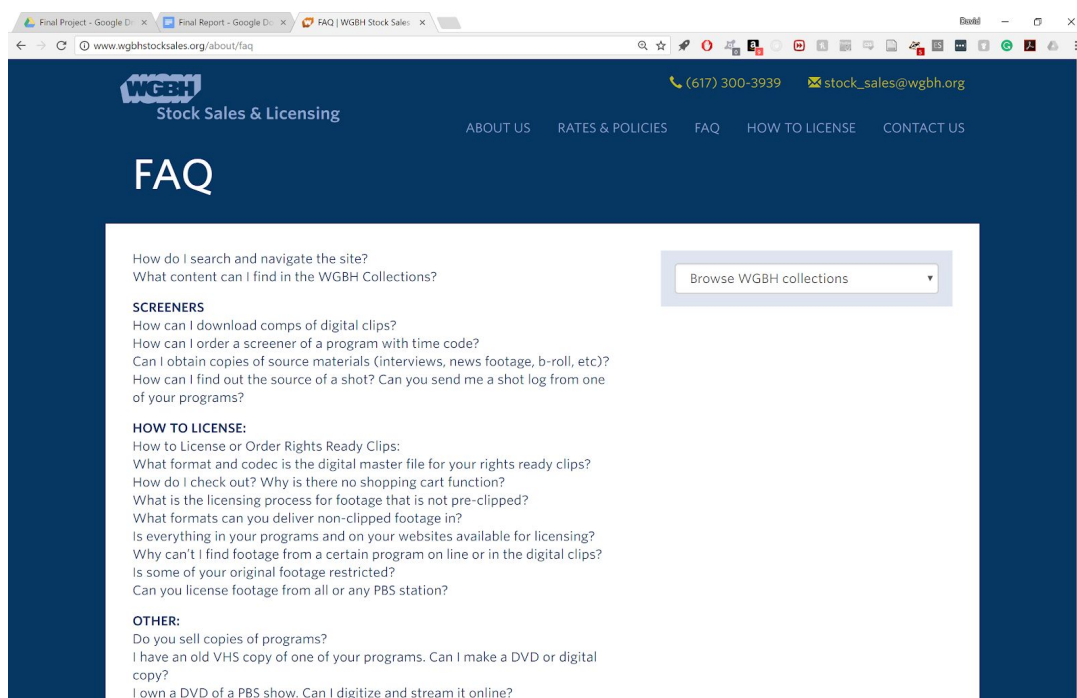


Fig. B7: The “FAQ” page. Mousing over a question underlines it, and users may click to the question’s location on the page.

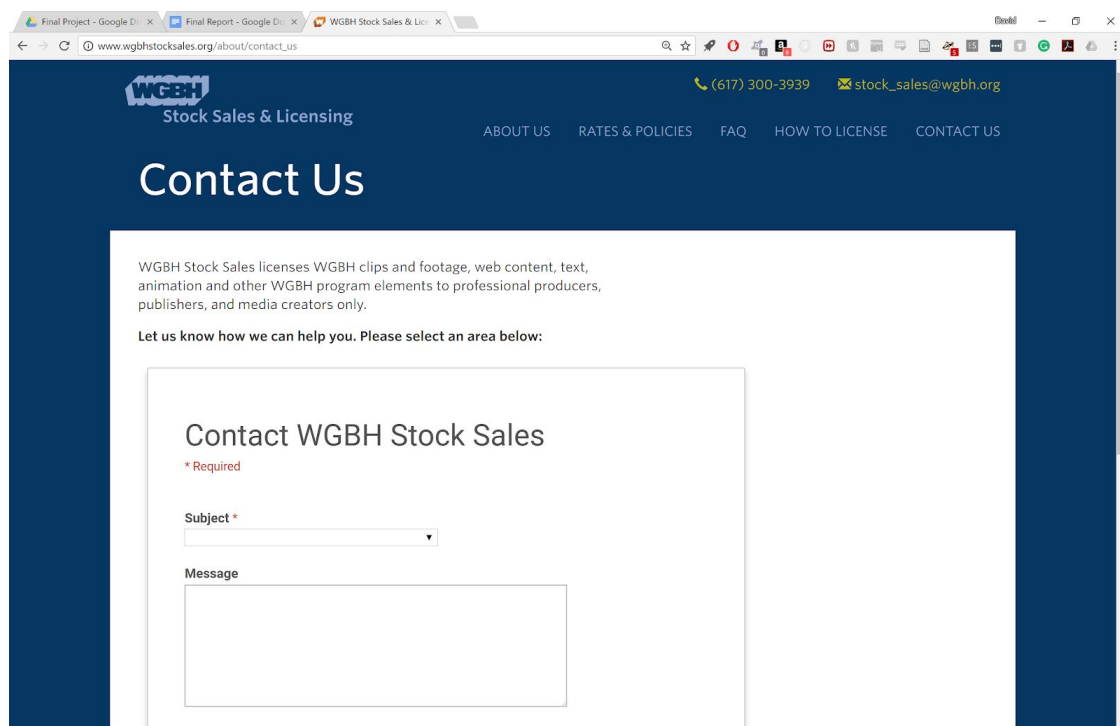


Fig. B8: The top 2/3rds of the “Contact Us” page. The bottom third contains the remainder of the form and the footer.

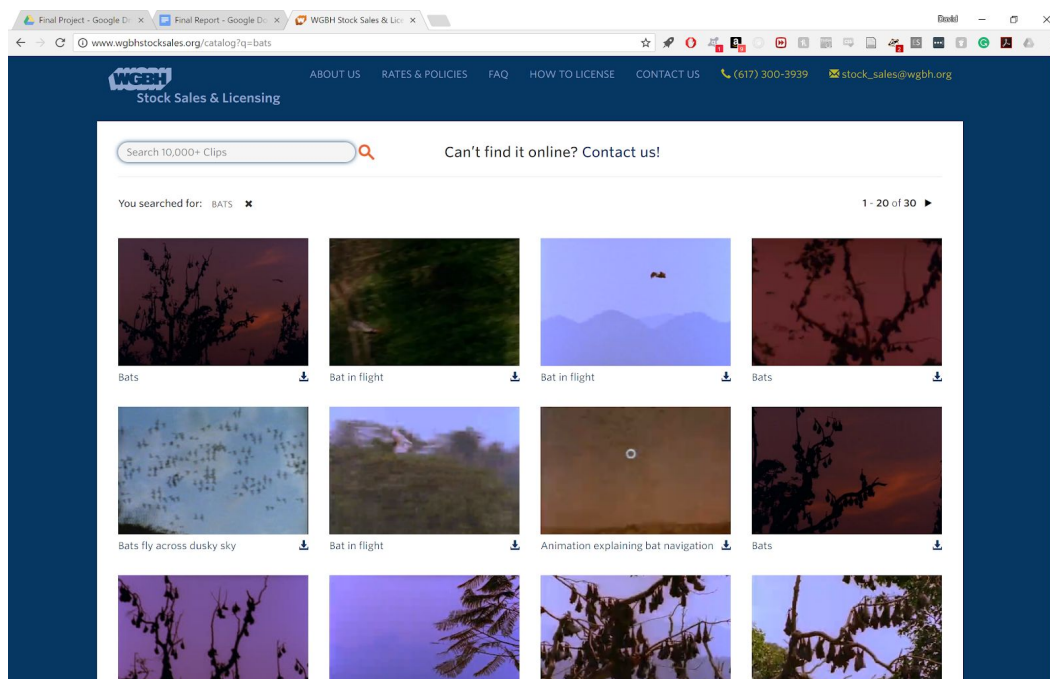


Fig. B9: The top half of the search page when a relevant term is inputted. When a clip thumbnail is moused over, it begins to play. The remainder of the page is similarly laid out.

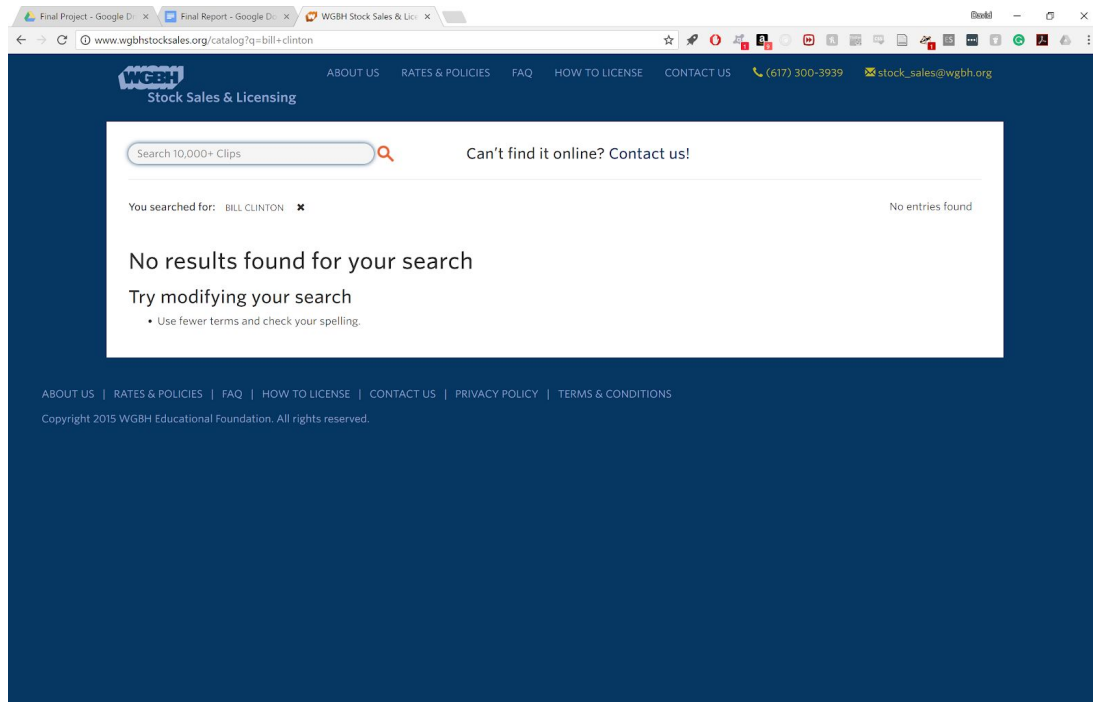


Fig. B10: The search page when a search returns no relevant results.

Appendix C:*Heuristic Review***Heuristic Evaluation Worksheet****Usability Heuristic Used:** Nielsen**Severity Levels:** 5pt

Heuristic Number	Problems Identified	Severity Rating
1	None. Pages load quickly.	0
2	Page design occasionally deviates from expected logical groupings. (Ex. Tiles on http://www.wgbhstocksales.org/ page do not reflect logical/expected groupings, which makes them difficult to interpret; symmetry of textual links above and below search bar suggest that both or neither will lead to additional search mechanisms, when in reality one leads to instructions and the other leads to OpenVault search.)	2
3	Users often have to navigate away from a page before they can continue their search. (ex. Search bar on individual show pages is difficult to find; users cannot license clip without contacting WGBH via phone or e-mail; no centralized search of all WGBH content)	3
4	Design is inconsistent in ways that disrupt use. (ex. Search bar moves around the page and is not always present; some buttons produce pop-up information while others expand or collapse information; some buttons produce pop-ups where user might try to right click and open new tab; drop-down box sometimes looks too much like search bar.)	2
5	Insufficient redirection when a search yields no results. Users may give up early and not find footage they want to license, even if it is something WGBH	3

	owns. Relationship between rights-ready clips and the rest of the footage WGBH owns is not clear.	
6	Information necessary to understand page setup, conduct an effective search, and license a clip is split across four pages (About Us, Rates & Policies, FAQ, How to License) and user must interpolate.	2
7	Keywords listed on individual clips are not shortcuts, users forced to retype or copy/paste keywords back into search bar. Users have little agency to take shortcuts they want or need.	2
8	On main page, design is not overwhelming and information is provided as needed. Individual show pages foreground ways to navigate away (like how to switch between tiles, external links to other collections, etc.) before communicating what's there, how to search it, and offering link to license it.	2
9	Page construction suggests rights-ready search box as primary search tool, and unsuccessful searches of that collection do not obviously redirect users to OpenVault or create the impression that there is likely relevant content elsewhere.	3
10	Help information is available but not always organized effectively. (ex. FAQ page available, but easily overlooked. Rates and licensing information are kept on separate pages, though users are likely to need these at the same time.)	2

Nielsen's 10 usability heuristics

	Heuristics	Conformance question
1	Visibility of System Status	Are users kept informed about system progress with appropriate feedback within reasonable time?
2	Match between system and the real world	Does the system use concepts and language familiar to the user rather than system-oriented terms? Does the system use real-world conventions and display

		information in a natural and logical order?
3	User control and freedom	Can users do what they want when they want?
4	Consistency and Standards	Do design elements such as objects and actions have the same meaning or effect in different situations?
5	Error prevention	Can users make errors which good designs would prevent?
6	Recognition rather than recall	Are design elements such as objects, actions and options visible? Is the user forced to remember information from one part of a system to another?
7	Flexibility and efficiency of use	Are task methods efficient and can users customize frequent actions or use short cuts?
8	Aesthetic and minimalist design	Do dialogues contain irrelevant or rarely needed information?
9	Help users recognize, diagnose and recover from errors	Are error messages expressed in plain language (no codes)? Do they accurately describe the problem and suggest a solution?
10	Help and documentation	Is appropriate help information supplied, and is this information easy to search and focused on the user's tasks?

Appendix D:
Content Inventory

Navigation title	Page title	Observations from user testing & team comments	Recommendations (keep/delete/revise)
<i>Menu 1</i>		<i>Not a drop-down menu, but a horizontal navigation bar</i>	
Menu 1 Item 1	About Us		
Menu 1 Item 2	Rates and Policies		Integrate with "How to License" info; make sure link text reflects content of page
Menu 1 Item 3	FAQ		Streamline and place after rates/policies/licensing page
Menu 1 Item 4	How to License		Integrate with "Rates and Policies" info; make sure link text reflects content of page
Menu 1 Item 5	Contact Us		
Menu 1 Item 6	Phone number		
Menu 1 Item 7	E-mail address		
<i>Section 1</i>		<i>Looped image and "Three Ways"</i>	
Section 1 Item 1	Scrolling display		
Section 1 Item 2	License footage from WGBH programs		
Section 1 Item 3	Embedded search		

Section 1 Item 4	Search WGBH Interviews and more from the WGBH archives "OpenVault"		
Section 2	Find More Content in the WGBH Collections		Sort into logical groupings of links and signify categories
Section 2 Item 1	Nova		Group with other shows
Section 2 Item 2	Frontline		Group with other shows
Section 2 Item 3	American Experience		Group with other shows
Section 2 Item 4	Open Vault		Group with search options
Section 2 Item 5	American Archive of Public Broadcasting		Group with search options
Section 2 Item 6	Digital Clips		Group with search options
Section 2 Item 7	Boston		Group with other topical collections
Section 2 Item 8	Julia Child		Group with other shows
Section 2 Item 9	Music		Group with other topical collections
Section 2 Item 10	Sports		Group with other topical collections
Section 2 Item 11	WGBH Limited Series		Group with other topical collections
Section 2 Item 12	In the News		Group with other topical collections
Menu 2		<i>Not a drop-down menu, but a horizontal navigation bar</i>	
Menu 2 Item 1	About Us		
Menu 2 Item 2	Rates and Policies		Integrate with "How to License" info

Menu 2 Item 3	FAQ		Streamline and place after rates/policies/licensing page
Menu 2 Item 4	How to License		Integrate with "Rates and Policies" info
Menu 2 Item 5	Contact Us		
Menu 2 Item 6	Privacy Policy		
Menu 2 Item 7	Terms and Conditions		

Appendix E:

Wireframes Based on Recommendations (Section XI)

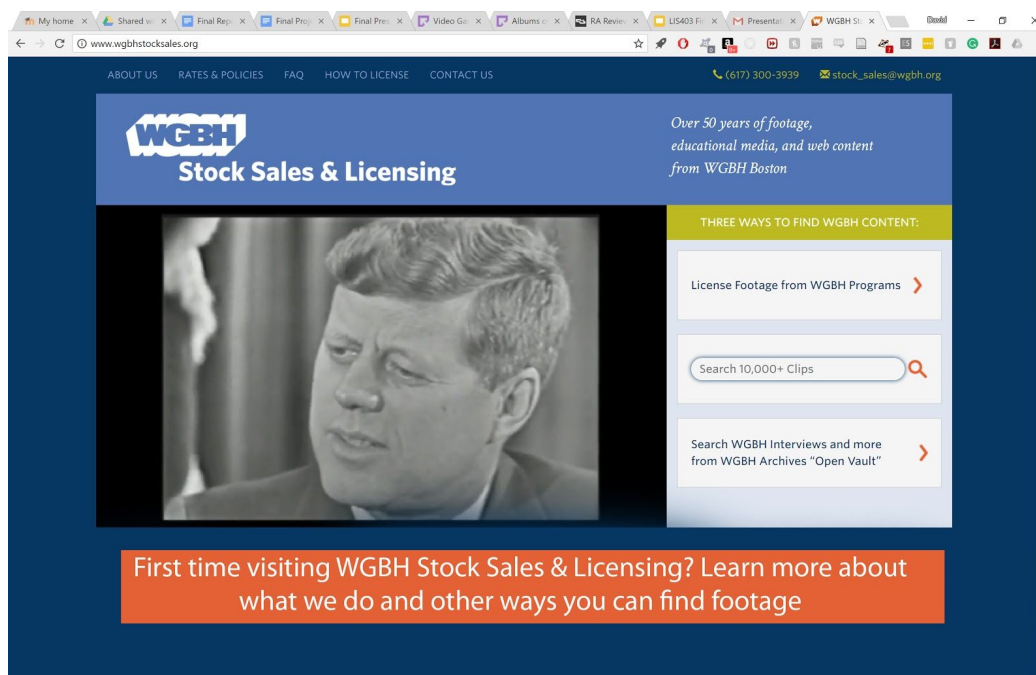


Fig. E1: Include a suggestion to visit page that explores differences between WGBH sites on home page

What We Do

WGBH Stock Sales & Licensing lets you use footage from our vaults for your own projects. We have digitized, rights-ready clips that are easily accessible here.

Looking for something else? We also license footage from other WGBH shows and projects, such as *NOVA* or the American Archive of Public Broadcasting - just head back here when you've gotten the relevant information. Here are the sites you can visit:



Fig E2: New page with explanations

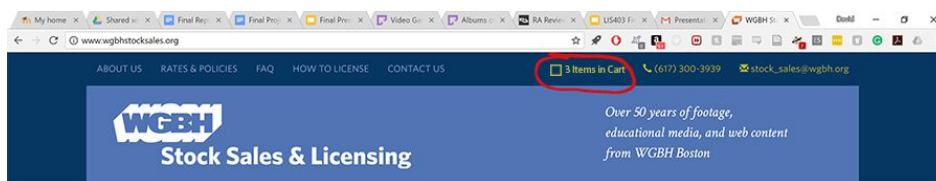


Fig E3: Shopping cart link, present on every page

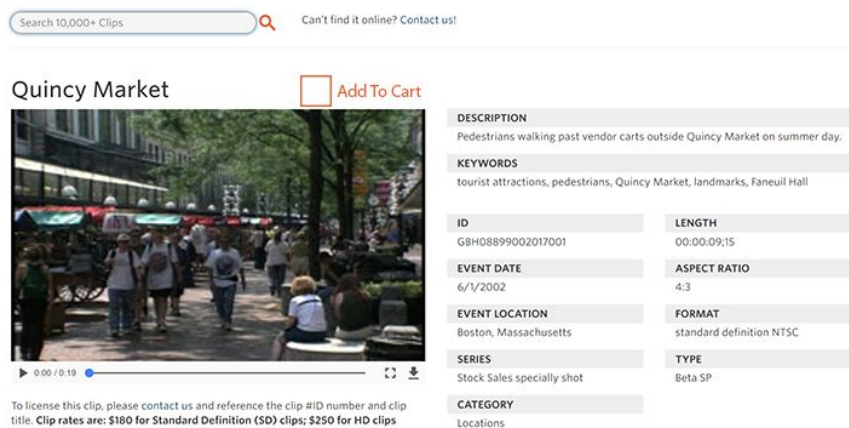


Fig E4: Button to add a given clip to the user's cart.
The squares next to the cart terminology are placeholder images.

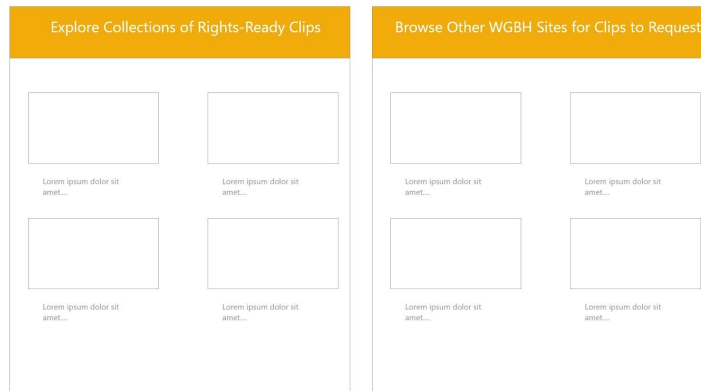


Fig E5: New version of the Collections section of the homepage,
divided into subject and series.

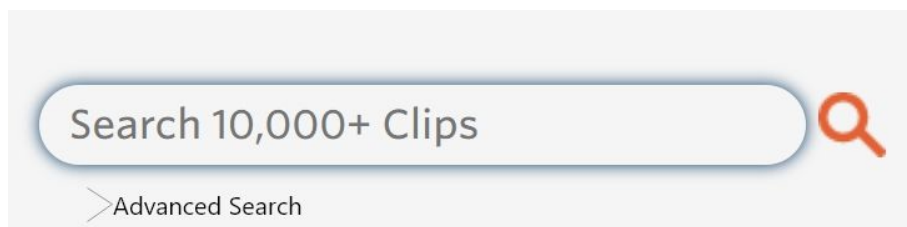


Fig E6: The search bar, with an added Advanced Search mechanism

Search 10,000+ Clips

Filter by tag(s)

Filter by aspect ratio

Filter by series

Filter by shoot location

Fig E7: The advanced search page, with proposed methods of filtering

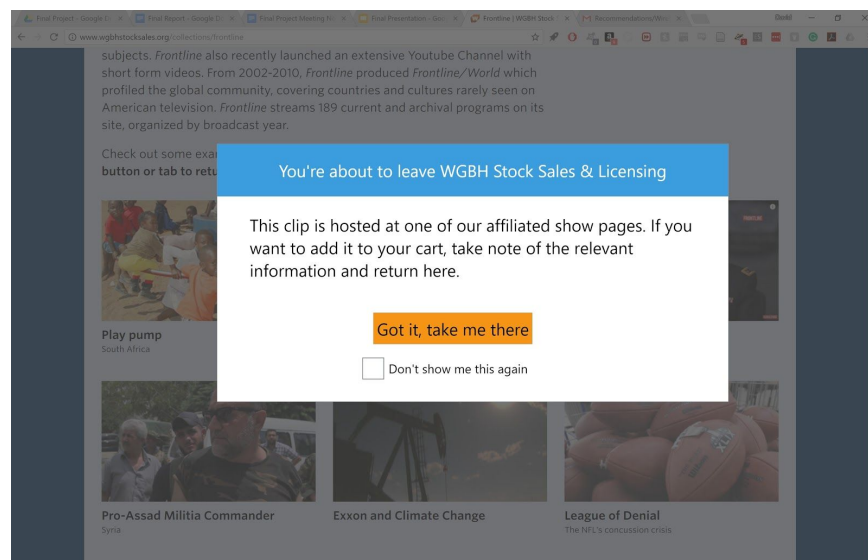


Fig E8: A popup that will appear the first time a user clicks on a clip that is hosted at another WGBH site. The user may prevent this popup from appearing again.