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Airline Safety: AirSafe.com, and AirSafeNews.com

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The AirSafe.com Podcasting Production Manual

A How-to Guide for Developing a Basic Audio or Video Podcast

Todd Curtis



Speedbrake Publishing
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The AirSafe.com Podcast Production Manual

A How-to Guide for Developing a Basic Audio or Video Podcast

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About the Author

In 1996, Dr. Todd Curtis created the web's most popular airline safety site, AirSafe.com. His aviation safety expertise has been featured by numerous news organizations, including the New York Times, and he has appeared on CNN, CBS, Fox News, Discovery Channel, the BBC, and National Public Radio. He holds a PhD in aviation risk assessment from the Union Institute, as well as engineering degrees from MIT, the University of Texas, and Princeton. Ten years after the debut of the web site, Todd created the podcast The Conversation at AirSafe.com to support the work of the AirSafe.com web site. This manual lays out in a systematic fashion the steps taken to create and maintain The Conversation at AirSafe.com, and provides organization or individual interested in producing and maintaining a podcast with the guidance necessary to give that podcast a good chance at success.

Introduction

If you are reading this, you probably have seen a video on a site like YouTube, or downloaded an interview or other show to play on your computer or in your iPod. You might have even created something on your computer to share with your friends. If you have done that, and if you have access to even the most basic personal computer, you can create a podcast, and then take that podcast and share it with the whole world.

Before I start telling stories about podcasting, let me tell you my own podcasting story. To make a long story short, I've published a web site since 1996. Back in those days, the web was all about the written word. Most computers were so slow, that for many people downloading anything more complicated than text could take a long time. If you wanted to put something online, it took money, time, and effort. Let's take a look at then and now.

Before There Was a Web: Once upon a time, in fact any time before 1989, there was no browsers, web sites, Google, or YouTube, and definitely no podcasting. If you wanted to communicate with large numbers of people using an audio or video production, there were very limited noncommercial options. Some cable television systems provided local citizens with training and equipment that allowed anyone to produce a television show that could be broadcast locally. Also, some local radio and television stations had limited amounts of time devoted to public affairs programs where someone could broadcast a show in a time slot that was usually between midnight and 6 am. As you can imagine, few people were able or willing to take advantage of these options.

The Early Days of the Web: For the first decade of so of the web, publishing something online meant you had to create a web site. That meant that you had to do things like negotiate with an ISP to host the site (and paying some money), going to another company to get the rights to a domain name (and paying more money), either hiring someone to create the web site or taking the time to buy a few books and learn how to build a web site from scratch (costing much more money). On top of that, most schools and libraries had no computers connected to the Internet, or had very limited online access, so you either used the computer you already had at home, or you to go out and buy a computer. By the way, the computer was useless without access to the Internet, so you had to go through a different ISP to get access to the Internet.

The Web Now: If you are thinking about putting content online, you don't have to spend money up front. You can still make web sites, but if you just want to try out the concept, you can go out and set up a blog for free (with free templates so you don't have to spend time designing things), and put text, pictures, and media like audio and video on it. Speaking of video, if you create one, you don't need a web site or a blog to promote it, just upload it to YouTube (for free), and tell all your Facebook friends about it (another free service). You want to create and launch 100 videos? That shouldn't be a problem either, but if you want to cross over from being a creator of audio or video files to being a podcaster, it calls for a change of mindset. The creation process can still be fun, but it has to be a bit more formal and systematic if you want to be a true podcaster.

What Is Podcasting?

The formal definition is for a podcast is an audio or video file distributed using the Internet. That definition doesn't really tell the story. You can have an audio or video file on a web site or blog, and

that is a form of distribution, but the real power of a podcast lies in being able to do several things:

- Create audio and visual media to communicate, entertain, or educate.
- Create multiple related works over a period of time.
- Make these creations available online for people all over the world to use and enjoy.
- Allow anyone to easily subscribe to podcast so that new episodes are automatically sent to them

The last point is the real key. If you are creating new works on a regular basis, and you either have an existing audience or want to develop a larger audience for your work, then you should make it easy for that audience to find and enjoy your work. Having them available on a web site or blog is a first step for reaching your audience, but it shouldn't be the only way for you audience to obtain your work. Creating a system where the audience can choose to have new works delivered automatically makes it much more convenient for your audience, and takes you beyond the world of a producer of a collection of multimedia files and into the world of podcasting.

OK, So Give Me an Example of How This Works

I'll give you my favorite example. AirSafe.com is a site dedicated to aviation safety and aviation safety policy issues. I created my first video podcast back in January 2007, and put the podcast on the web site. I also put it on YouTube and Google Video, and talked about it in my mailing lists. I had what I thought was very good traffic. In 21 months, I had about 10,000 total downloads. I learned a lot over those 21 months, like how to get the video on video sharing sites like Google, how to get the video noticed by search engines, and how to spread the word in other ways.

Over time, I created many more videos, and also got much smarter about expanding my audience. A year ago, my most popular video got about 1,000 downloads the first month it was available. More recently, my most popular video by far got about 25,000 views in just under a month. My videos didn't get more fancy or dramatic. My basic video is little more than a narrated slide show with lots of bullet points, a few pictures, and even fewer video clips. What I did differently was apply a whole lot of common sense that I gained from making and distributing podcasts for the last three years and applied that common sense in ways that allowed me to figure out what the audience liked. Once I got to that point, I simply kept applying my basic marketing strategy—**Give the people what they want, and just a little of what I think they need.**

So What Does It Take to Make a Podcast?

You don't have to have years of experience to put together a good and popular podcast. What I'll tell you in this manual will help you get up to speed quickly and will help you avoid many of the problems that can doom your podcasting dreams. In my opinion, you have to have at least a general idea of what to do and what not to do. More importantly, you have to have a very good idea of why you are doing it.

OK, Now What? How Do I Make A Podcast?

The next section gives you a broad overview of the podcasting process. That will be followed by a couple of case studies of actual podcasts. Finally, I'll provide you with additional checklists, guidelines, and resources for making your own podcast.

Part 1: The Grand Plan for Your Podcast

Why do you need a grand plan? The short answer is that a successful podcast is one that has not just one episode, but many. If you or your organization plans to do many episodes, then it helps to have some structure to the process. If you think that you can go ahead and start your podcast without prior planning, then skip this section. If not, take a little time to read over this section.

1.0 An Overview of the Eight Things You Need for a Successful Podcast

Making a podcast is a combination of desire, organization, and technology. An increasingly easier part of the process is the technology, in part because thousands of groups and individuals around the world are working hard to make the technical aspects of creating and distributing podcasts easier and cheaper (so cheap that many of resources you need are free). Organizing the people and resources to make a podcast happen is not that difficult either, in part because many hundreds of thousands of podcasters have provided anyone who is interested with examples of how to create and run a successful podcast, as well as examples of how to run one into the ground.

In my opinion, the part of the process that is the key to a successful podcast is desire. This kind of desire isn't the enthusiasm of that an individual or a group has at the beginning of a new project, but a higher level motivation that will keep a person or a group focused and moving in the right direction in the face of distractions, setbacks, and roadblocks. In other words, if you set out to make a podcast because it sounds like a good idea, then the podcast will likely not last. Like with many other things online, podcasting is a method or a tool that helps you do something more important.

I could go on for hundreds of pages about what podcasting is and how to make a podcast, but that territory has been covered quite well by the authors of the many how-to podcasting books on the market (I own a few of them myself). My goal here is to introduce you to the AirSafe.com style of podcasting, and to give you enough background information and supporting material to create your own system for planning and producing a podcast series.

What follows in this section is my description of how desire, organization, and technology combine to create a podcasting system. I've taken these three general concepts and put them into eight somewhat more specific categories or tasks that I feel should be completed in order to have a good podcast. The rest of this part of the document gives an overview of these eight sections, and afterwards I'll show you two podcasting case studies from AirSafe.com and how I accomplished these eight tasks:

1. **Mission:** Why would you need to have a mission to create a podcast? Let's put it this way. If you're going to put in the time and energy to do a decent job, you have to have some reason that drives you to do this, something that'll give you the inspiration or the motivation to overcome the problems and obstacles that will happen between a decision to make a podcast and the final result.
2. **Team:** Even if you are working by yourself, you will have to deal with other people or with someone's organization to make things happen. For example, even the most basic podcast has to have some kind of online presence in order to have an audience, so your “partners” or “team

members” will include the blogs or web sites where the podcast can be found, and the online resources such as search engines that you will use to attract a bigger audience.

3. **Leadership:** Someone has to take responsibility for the podcast, and that includes overseeing the planning, production, and distribution of each episode.
4. **Resources:** Luckily, most of the resources needed for a podcast are either free or easy to obtain. If you have access to a personal computer and the Internet, the amount of additional equipment that you need is minimal, and may even be zero.
5. **Communication:** Several things have to happen in get a podcast off the ground and to keep it running. For many parts of the podcasting process, such as convincing people to work with you, you need to be able to do basic things like exchange emails or other written messages. It doesn't stop there. Your team members, guests on the show, audience members, and everyone else involved with your podcast may have a need to contact each other at one time or another, and you have to make sure that you've set things up to make that happen.
6. **Systems:** You're going to need basic hardware and software to make a podcast happen, but the systems that can make or break a podcast, things like search engines, blogs, and subscription services, have to be understood well enough so that you can use them to reach an audience. If you can manage these kinds of free online resources, you can use them to reach a much wider audience.
7. **Legal Issues:** Luckily ,you don't have to be a lawyer to understand how to keep out of legal trouble with a podcast, but like a lot of other risks, a little bit of prevention can avoid a whole lot of hassles.
8. **The Podcast:** Why is the podcast the last thing on this list? The biggest reason is that if you don't deal with all of the seven issues, a problem with any one of them can take all of the fun out of making a podcast, and may prevent you from learning from the experience. An equally important reason is that if you've taken care of the previous seven items on this list, it makes it more likely that your next podcast series is a success and and that you will be able to apply a very similar system to any future podcasting projects. The podcast may be the last thing on this list, but it is also the thing that makes the effort to complete the other seven steps worthwhile. If you make the right moves now, the podcast you create today could still be educating or entertaining audiences decades from now.

1.1 The Mission

Creating a podcast takes time, dedication, and more than a little bit of work. When you start the process, the obvious goal is to complete it and put it in front of an audience. That goal is not the mission of creating a podcast. The mission is the larger reason that you are doing this. If you're already in an organization such as a school or business, and if your organization has a mission statement, then your current mission statement should be the foundation of your podcast's mission.

If your group doesn't have a formal mission statement, or if you are doing this podcast independently of any formal group, then you should figure out what the mission should be for your podcast. My suggestion for coming up with a mission statement is to think about what drives you to make the

podcast. Imagine what goal is so important that thinking about that goal is enough to inspire you to overcome the obstacles that will no doubt come between you and a finished podcast. The mission should be clear enough to be able to write down in one or two sentences. You are free to change that mission at any time, but before you read any further, write it down right now.

Mission Statement: _____

1.2 The Team

No one makes a podcast alone. Even if you are working by yourself, the goal is to create something that you will share with others. The roles that even a team of one has to perform is no different from the roles that a larger team would do. Even with a team of several people, each person will likely perform two or more roles. Also, some roles are fulfilled by advisors who may only occasionally be involved with the rest of the team. Those roles would include the following:

Technical manager: responsible for overseeing hardware, software, and other technical resources.

Legal advisor: responsible for making sure that the podcast team understands and follows the organization's rules, and the basic rules for creative works (issues such as copyright and fair use).

Episode producer: responsible for organizing and managing the content or other resources needed for a podcast episode.

Talent and content wrangler: responsible for finding content and guests for a podcast episode.

Podcast manager: responsible for overseeing issues affecting the podcast as a whole.

Marketing manager: responsible for making the current and potential audience is aware that the podcast and individual episodes of the podcast are available.

Fulfillment manager: responsible for the process that allows a user to download a single episode or subscribe to the podcast.

Technology advisor: responsible for evaluating changes in online technology and online resources and recommending how those changes and resources will affect the podcast production.

Podcast Mentor: an outside person who provides practical advice on the planning an production of a podcast. Depending on the podcast, one or more of the roles may even be accomplished without involving people. For example, a podcast mentor could take the form of a book, magazine, blog, web site, or other resource that can be consulted to address specific issues.

You may be able to rely on technology to do some or even all of the work for a particular role. For example, Apple's free iTunes software, which all iPod users must use to put content on their iPods, allows any podcaster to register their podcast with Apple. By doing so, anyone with iTunes can use the software to to subscribe to your podcast, or to download individual episodes. It is a marketing tool because it allows people to easily find podcasts by subject matter or keyword, and it is a fulfillment tool because it can be used to download the podcast.

1.3 Leadership

No podcast gets created unless someone is willing to organize and manage the resources needed to create them and to make sure that they are available to audience. If you are making the podcast alone, then you have to be willing to fulfill that role. If you are part of a group that is making the podcast, then there will likely be one leader who is responsible for getting completed episodes out the door, and another leader in the organization's management team who will work to get the organization to support and promote the podcast effort.

This instruction manual may be very useful in describing what has to be done to create a podcast, and may be a very useful tool to help manage the process, but unless someone is willing to accept the responsibility of overseeing, managing, and promoting the podcast, you may not be able to create more episodes once the initial excitement dies down.

1.4 Resources

The easiest part of the process for a beginning podcaster is finding resources. Most personal computers come equipped with the hardware and software needed to create a basic audio or video podcast. In addition to a personal computer, you would need online access, the ability to record audio or video content, edit that content, and make the content available to the public:

- **Online Access:** For podcasting, you need to have the ability to not just go online, but also to upload your finished podcast. Any basic personal computer has the hardware and software needed to upload the podcast. You would need the ability to either upload those files from your hard drive, from a location on your computer network, or from a thumb drive or other data storage media that you connect to the system. You probably won't be able to upload files from a public terminal at a place like a library, but you should have no problem from a computer at home, school, or work. You will also need to be able to download much of the software or content that you would need for your productions. While you could get by with dial-up access, it would be much less time consuming if you had DSL or some other kind of high speed access.
- **Recording Hardware:** Many new computers, especially laptops, come with built-in microphones that are good enough for recording speech. If your computer doesn't have a built-in microphone, you can buy a basic microphone for well under \$30 that can plug directly into the USB port of your computer. If you are creating a video podcast, most consumer camcorders, and even cell phones with video recording capability allow you to download the video file onto your computer. You can also use a webcam or your computer's built-in video camera for recording video near your computer.
- **Recording Software:** For audio recording, Apple and Windows personal computers both come with software that allow audio recording, with Apple's GarageBand software being quite a bit more capable than what is included with Windows XP or Windows Vista. Audacity, a free program available online, is an excellent audio recording program that works on both Apple and Windows computers. Appendix 1 has details about how to download this program.
- **Editing Software:** All new Apple personal computers come with the GarageBand audio editing software and the iMovie video editing software, and both programs allow you to save your output in a format that is convenient for podcasting. Computers running Windows XP and

Windows Vista also have a video editing program called Windows Movie Maker that allows you to create video podcasts. Audacity, which can be used to record audio, is also an excellent tool for editing audio on both Apple and Windows computers.

- **Making the Podcast Available:** In order to make the podcast available to the public, the file must have a unique URL, which means it has to reside on a server that can be accessed from the Internet. There two basic ways to do this, by using one of the many free blog, web site, or podcast hosting services available online, or by using a paid version of one of these services.

One of the big differences between the options is how the files are accessed. In general, you have three choices: you can place the files online so that they can be downloaded directly, they can be placed so that they can be played from a web page or blog, or you can use a combination of those two options. Depending on what options you choose, you may have one or more locations from which the podcast can be played, and one or more locations from which a podcast can be downloaded.

- **Marketing Resources:** Unlike the final scenes of the movie *Field of Dreams*, people don't magically appear just because you create an attractive destination. A podcast needs an active marketing effort to make potential users aware of the podcast and encourage those users to either download a single episode or to subscribe to the entire podcast. There are usually a combination of online and offline marketing resources one can use, from word of mouth, to mailing lists, to blogs. The marketing effort may even be helped by outside organizations. For example, podcasters who register their podcast with iTunes make it easy for any iPod owner to find their podcast, and to download one or more episodes into their computer or their iPod.
- **Distributing the podcast:** The thing that makes a podcast different from a collection of multimedia files is the ability to be distributed to subscribers. Basic options for subscribers include getting notified when new content is available, getting new content automatically delivered, or having the option to conveniently find or download older content.

Distribution also takes into account how the podcast will be used. The most likely options are online playback and downloading shows for later playback, either on a personal computer or through a personal electronic device like an iPod.

In the examples later in this manual, I'll show you a couple of ways that different podcasts were created and distributed, and describe how the combination of resources were used to get the podcast up and running.

1.5 Communication

There are two kinds of communication that has to be managed for any podcast, internal communication among the people who are directly involved with creating, managing, producing, and distributing a podcast, and communication with the individuals or organizations that come in contact with the podcast.

Although podcasts are either an aural or visual medium, you have to be willing to write things down in order to communicate. While it is important to have face-to-face communication skills, most of the time, the people involved in a podcast, either as creators, supporters, or consumers, don't have to be in

the same room. Also, a successful podcast may be around so long that new people will get involved and others will drift away. Achieving high level goals such as staying true to the podcast's mission and more basic goals like maintaining consistent quality between shows is much easier if things are written down.

In the case studies, I'll provide you with examples of the kinds of communication that you may have to manage in a typical podcast, as well as practical advice on how to reduce the amount of time and energy spent on the routine aspects of podcast production and management.

1.6 Systems

Your systems are the heart of the podcast production process. The technology of podcasting, the computers, cameras, microphones, and the like fit into the system of podcast creation. If you have a system that works well, then you and your team will have an easier time creating shows, and your audience will likely see regular additions of new content as well as a consistent improvement in the quality of their experience.

For the case studies in this manual, the systems that are directly related to producing a podcast series included the following:

- **Overall preproduction planning:** Before you make a single show, it helps to think through things like why you want to do it or how it should be done. This preproduction planning includes making general marketing decisions, including what online resources you may be able to use.
- **Prelaunch actions:** Once you've decided on things such as the podcast title and its intended audience, then there are several specific tasks that you should complete before you launch the podcast. At a minimum, you should complete the first episode and create an RSS feed for the podcast. Related activities that should take place around this time include your initial marketing efforts and completion of any any online podcast support activities such as creating one or more blogs to support the podcast, redesigning your web site to accommodate podcast related resources, and planning initial media releases or other media related events. If your podcast is supporting one or more ongoing activities or projects, your initial efforts should be focused on making those involved in those ongoing activities and projects aware of the new podcast.
- **The podcast launch process:** When the first show is completed, you should systematically inform your initial audience, as well as implement the appropriate parts of your marketing strategy.
- **Decision system to determine what additional episodes should be made:** If you've spent time planning and thinking about your podcast, figuring out what shows to do should not be difficult.
- **The planning process for an individual podcast:** Before you lay down a single track, you should know what kind of resources you need, including hardware, software, content, and people.
- **The content collection and creation process:** No matter how simple the podcast, you have to have some idea about where your content is coming from, and what you have to do to ensure that you are able to use that content once you acquire it.

- **The editing process:** This will depend on whether you are doing an audio or video podcast, and on what kind of software you use.
- **The episode launch process:** For each new episode, at a minimum you'll have to update the RSS feed. You may want to do additional things to encourage current audience members to participate, and also to reach out to new audiences who may be particularly interested in the topic of the podcast.
- **The episode evaluation process:** After the podcast is in the wild, you have to have a way to figure out if it had the desired effect or reached the desired audience.

Other systems that were always running in the background are related to your overall online strategy. While these systems benefit the podcast, they also will likely also support all of the other things that you do online:

- **The communications process:** This includes communication among the leadership team and production team, as well as communication with the audience and other interested outside groups.
- **Marketing and promotion process:** These are the things that you do all the time to get the word out and keep the audience interested.
- **Technology evaluation and implementation process:** The online world is changing so fast that in any given month there may be two or three things that catch your attention. You have to have a way to decide if it is worth your time and effort to incorporate new options into your podcasting process.

1.7 Legal Issues

The Internet is all about free expression, but it doesn't mean that there are no rules. If you understand just a few basic things about the legal realities of podcasting, you will be able to avoid problems with lawyers, Internet service providers, or your organization.

Most of the legal issues are taken care of by common sense. First, if you want to use someone else's work in your podcast, ask permission. Second, assume that anything that ends up online will be around for a long time, so don't do anything that may come back to haunt you next week, next year, or even 50 years from now. Third, don't threaten anyone, break the law, or spread lies about others online. Finally, if it doesn't feel right, don't do it.

Copyright

Let's move from common sense to basic online legal issues. Probably the most important one is copyright, which for a podcaster means that anything you do that is original is owned and controlled by you (or by your organization). Copyrights are free and recognized by most countries in the world. Even if you let the whole world enjoy your podcast for free, only you have the right to control how others can use it.

There are only a couple of things that you need to know about copyright. First, anything that you create automatically has copyright protection. In the case studies, I'll show you some very basic steps you can take to protect your copyrighted material. Second, just about anything that is online is copyrighted, so you have to be careful when you use material from elsewhere. Third, owning a copy of a copyrighted

work (like a book or or music from iTunes) doesn't give you the right to use it. The case studies will cover this issue as well.

Fair Use and Public Domain

Two concepts related to copyright that are very important to podcasters are fair use and public domain. Fair use allows you to sometimes use copyrighted material without the permission of the copyright holder. This allows you to look at copyrighted material online, make copies for personal use, or use it for educational purposes. When fair use stops being fair can be hard to say. The case studies will look at this issue as well.

Material in the public domain does not have copyright protection and can be used freely. In general, copyright expires a few decades after the creator of the work expires, and most material produced over 100 years ago is in the public domain. Newer material may be in the public domain if no copyright was ever claimed. Most works by the US government (like NASA photos) are also in the public domain.

Rule Breaking

This is a very easy section to understand. Don't break the rules when you make your podcast. This goes for local, national, or international laws; online usage rules of your school, job, or family; or the terms of service of providers of either free or paid online services. If your school, job, online service provider or anyone else you deal with have written rules, review them. If you don't need to review them, at least make note of where they are so you can review them if you have to.

In the case study, you will see examples of how understanding the rules keeps AirSafe.com's podcasts well away from this kind of hazard.

A Note on Legal Advice

If you need more sophisticated legal advice, by all means go out there and do the appropriate research or hire the appropriate expert. I am certainly not a legal expert, and if you decide to act on any of the information in this document, you do so at your own risk.

1.8 The Podcast

The podcast is last on this list because if you have taken the time to deal with the first seven steps in building a podcasting process, executing that process will be much easier. Rather than spending time and energy going over the same issues over and over, take the time to deal with them ahead of time. Once you do that, then you can sit back and start thinking about issues like what is the podcast going to be about, how sophisticated a podcast you want to have, and what kind of team do you have to build to make it all happen.

Generally speaking, you make a podcast in order to satisfy an audience. The more you know about the wants and needs of the audience, the more you will satisfy your audience. The case study will take you through the development of two podcasts, one audio and the other video. The case studies will provide the details of the podcast and why they were designed the way they were, but what it doesn't show is that the process of creating a podcast is ongoing. Once you get going, you'll have a better idea of what you have to do to keep your particular podcast relevant to your audience.

The following points are suggestions for the beginning podcaster. If you follow this advice, you will have a better chance of having more fun with your podcast:

- **Start with reasonable goals:** No matter why you are doing a podcast, you should have one or more goals that are measurable and reasonable, such launching the first episode by a particular day or producing a specific number of shows in the first month.
- **Start cheap:** Do what you can with what you already have. After you review the case studies and other materials, you'll see that you probably don't have to spend an extra dime to get the first few podcasts out the door.
- **Start simple:** Don't try to do too much with your early podcast episodes. If you start with a solid foundation in the form of a reasonable plan for producing episodes, you can easily add extras later.
- **Start short:** In the beginning, limit the number of things you do with your early episodes. Once you get comfortable with producing shows, then you can think about putting more content into your shows. For reasons that will become clear after you review the case studies, you may want to keep the length of video podcasts to less than 10 minutes. Videos longer than this are not allowed on many video sharing sites, including YouTube.
- **Always have a plan:** No matter how smart or capable you are, podcast production is easier if you have some kind of structure to work with. The plan could be a checklist for routine actions, or it could be a script you write, rewrite, and rewrite again before you turn on the microphone or the camera.

Part 2: Case Studies

The case studies in this section are both based on my experiences creating and running audio and video versions of the *Conversation at AirSafe.com* podcast. It will follow the general eight-step development process from the previous section, with much more detail provided about the hardware, software, and techniques used to create the podcasts.

2.1 The Audio Podcast: The Conversation at AirSafe.com

When I first decided to come out with a podcast in early 2005, it was to support the ongoing activities of my aviation safety web site AirSafe.com, which at the time had been up and running for nine years. At that time, podcasts were in a similar position as web sites were when I decided to start one ten years earlier. Starting a podcast in 2005, like starting a web site in 1995, took a little bit of work and dedication. Because AirSafe.com had very little money and no staff, I had to do some research to figure out what I didn't know, and where I could get some education. Unlike the case with learning how to build web sites in 1995, there was a wealth of online information about podcasts that gave me a clear idea of what I had to do to get things started. Between what I found online and one or two books that I bought, I had more than enough to get going.

My experience with web sites gave me several advantages. The most important was that I had a built-in audience from visitors to my site and members of my mailing lists. The second was that many of the eight steps I described had already been completed. These are the advantages you would have if you are creating a podcast for an already existing organization, group, or project. If you are doing a personal podcast, or one for a new group or project, you can follow the outline I provide in the resources section of this manual.

2.1.1 The Mission

The AirSafe.com web site was started to provide the public with useful information about aviation safety and security. The particular focus on the site was providing factual and timely information on events that involved the deaths of airline passengers.

Mission, Strategy, and Tactics

The major strategy to support that mission was the use of the Internet as the primary means of both providing information to and communicating with the public. Initially in 1996, the strategy was to have the information reside on a web site and to encourage visits by having related sites provide links to the site, and using email to invite people, especially those in the media and the aviation safety industry to visit the site.

As online technology evolved, so did my tactics. The rise of the importance of search engines led to a second major tactic, restructuring the content and the underlying HTML code used in the web pages to allow pages from the site to rank highly for airline safety related searches. Over the last few years, the increasing popularity of iPods and other personal electronic devices led me to consider podcasting as a third major tactic that would help to better serve the AirSafe.com audience. My thought was that this tactic would do two things, provide web site information in an audio format that before had only been

available as text, and more importantly providing users more options for AirSafe.com's information. For example, the site AirSafe.com was unavailable in places such as an airplane where it was difficult or impossible to go online using a personal computer. Now, with an iPod or other audio device, users could access AirSafe.com in the car, at the gym, or in the stratosphere.

Content Philosophy

While the mission was providing the public with useful information, one of my most important insights I gained from running the site was that what information I chose to present was as important as the quality of the information. After all, every visitor to the site has dozens of alternative sources of information for the kind of information I provided. The philosophy I developed was simple—Give the people what they want and just a little bit of what I think they need.

Following the philosophy didn't compromise the mission or the quality of information I provided, but it did influence what kinds of information I provided and how much I provided. If the content in a particular subject area doesn't generate traffic, then I won't add any more content. If it generates significant traffic, then I'll simply keep giving the audience more of what it wants. If there's a little something extra that I think the audience needs, then I'll throw that in too.

2.1.2 The Team

Because the site had an established audience and an established network of individuals, web site owners, and organizations that partnered with the site for various reasons, they were also brought in as members of the team. For passive team members, for example sites that linked to AirSafe.com, their contribution was the traffic their links generated for the site. The addition of the podcast didn't change this relationship. Other passive team members included the people and companies that provided information about podcasting online in web sites, blogs, and podcasts, as well as those that provided offline resources in books and magazine articles about podcasting.

I turned some of the passive team members who were in the aviation safety arena into active team members by inviting them to be a guest for one or more shows, or by asking them to help market the podcast.

The Size of the Team

Because the podcast supported the web site, and because I was already responsible for all work and all decisions involving the site, my podcast team consisted of one member, namely me. My plan was to do all of the podcast production and content creation on my own for the first few shows, and to possibly include others in the process as I became more familiar with the needs of the production. The initial shows were all planned to be ones where I could perform all aspects of the production. They were limited to shows where I summarized the facts, data, or policy issues surrounding some kind of aviation safety or security event.

As I got more comfortable with the process, I added shows that included guests. For each of the guests, whether were a part of one show or several, I made them a part of the team by doing three things:

- Making the guest aware of the mission of AirSafe.com.
- Explaining why I wanted to do an interview.

- Describing how the interview may be used.
- Having the guest consent to doing the interview and using it for the purposes I described.

It was an easy sell for most of the guests since many of them had known me personally or were quite familiar with my work with AirSafe.com. By the way, this requirement to have guests to give their consent to be interviewed is also associated with the legal aspect of this podcast, and will be discussed later in more detail.

The guests were active team members only for the duration of the interview. Their contribution however, would always be a part of AirSafe.com. Once their interview was recorded, edited, and made a part of one or more episodes, they would be a part of AirSafe.com for as long as AirSafe.com exists.

The Future of the Team

After more than three years, the AirSafe.com podcast team has the same composition, with one permanent member (me), temporary members who are on the team for individual shows (guests), and passive members like my podcasting mentors. Expanding the number of permanent members will depend on the direction of the show. The most likely outcome is that my company will maintain ownership and control over the podcast, but that others could be brought in to perform some or all of the duties needed to produce additional shows.

2.1.3 Leadership

Figuring out who would lead my podcast effort was easy. I made all the planning and management decisions before, during, and after each show was produced, and owned the copyrights to the show, so that made me the leader. Because the podcast was created to support the previously existing web site, all major decisions regarding the podcast were based on what was in the best interest of the mission of the web site. The podcast represented a different kind of online technology and a different kind of relationship to the audience, but in the beginning it did lead to any major changes in how the web site was managed.

As I made more podcast episodes and found out more about how people relate to podcasts, I came to realize that people find and use podcasts in ways that are very different from the ways that visitors find and use traditional text-based web sites such as AirSafe.com. For me, a key decision was to take action and do what was necessary to develop additional resources and procedures to exploit those differences in order to expand the audience for the podcast. These resources and procedures are described in more detail in the next section.

2.1.4 Resources

There are two kinds of resources needed for podcasting, human and technological. Identifying, building, and maintaining a team takes care of the human resources. For the AirSafe.com podcast, the human team was easy to manage since it consisted only of myself and the occasional interview guest. For technological resources, the podcast relied on a number of online and offline resources:

- **Online Access:** I used the already existing online access resources for the AirSafe.com web site.
- **Recording Hardware:** I didn't have to buy additional computer hardware. The computers I used

to support my AirSafe.com web site work (a desktop and laptop running Windows XP, and a MacBook) allowed audio inputs. Neither computer had a built-in microphone, so I had to buy a few accessories, specifically a microphone, microphone cables, and a small mixing board.

- **Recording and Editing Software:** While my Windows computers had some limited capability to record voice audio inputs, they didn't have the capability to edit audio. In my research, I found out about a highly recommended and free program called Audacity, which allowed me to edit and record audio, and to export the result as an MP3 file (the most popular type of audio file format used by podcasters). While I could use GarageBand for audio editing on the MacBook, I eventually decided to use Audacity as the primary audio editing software on all of my computers. I've provided information on where to find Audacity in Appendix 6.
- **Making the Podcast Available:** Because the podcast was designed to support my existing web site, I used the site, specifically the resources I rent from a web site hosting company, to host the audio files and RSS feed from the podcast.
- **Marketing the Podcast:** For the podcast, I used several marketing resources and techniques that were already being used for the AirSafe.com web site, including email mailing lists, links on high-traffic AirSafe.com pages, and pages within the site that were dedicated to the podcast. Those pages also made it easy for major search engines to present those pages as options for searches that included both podcasting and aviation safety or security terms. Additional marketing resources developed specifically for the podcast included:
 1. Submitting the podcast to Apple so that the public could download individual episodes or subscribe to the podcast using iTunes,
 2. Incorporating podcast summaries into a blog dedicated to the podcast,
 3. Including podcast subscription links on the web site and on AirSafe.com associated blogs.
 4. Submitting the podcast to numerous podcasting directories, and
 5. Creating press releases for new episodes (often including the transcript of the podcast and always including a link to the podcast's home page) and distributing them using free online press release services such as PRLog.com and openPR.com.

The Feedburner service from Google was used to enhance the original RSS feed, and using several Feedburner options each new feed entry was automatically announced to a number of feed reading services. Feedburner was also used create animated banners that would provide links to recent podcasts. These banners were incorporated into several of the higher traffic pages on the AirSafe.com site.

AirSafe.com's email newsletter was also designed to work in conjunction with the main AirSafe.com blog. Because of the number of pages in the site, I used the newsletter to inform subscribers whenever there was a noteworthy addition or change on the site. Once the podcast started, I announced new podcast episodes in this same newsletter. My mailing list service allowed me to kill two birds with one stone by sending the entire mailing list an email that included a link to the newest blog entry. By updating the blog with a summary of a new podcast, I not only added a new entry on the blog, I would also automatically inform everyone on the mailing list of the new podcast episode.

- **Distributing the podcast:** All of the completed podcast episodes were located in a directory on the same server used by the AirSafe.com web site. Links to the individual podcasts were provided in multiple locations on the site, as well as in the AirSafe.com related blogs that mentioned a particular podcast episode. Those who subscribed to the podcast through iTunes or through some other podcast subscription service, or who may have encountered a link to an episode on some other web site also ultimately downloaded their episodes from this same directory.

2.1.5 Communication

Because there was only one permanent team member, the most important communication issue was with the temporary team members who were interview guests on the podcast. I would make at most a handful of phone calls or send a few emails to both arrange an interview and to get the guest's consent for using their interview in the podcast. The one requirement I had was that the consent of the guest would be either in written form (typically an email) or recorded at the beginning of the interview.

While the podcast initially had only one team member, the long-term plan for the site was to develop an operations manual containing instructions for every necessary part of the process so that production duties could eventually be assigned to others.

In addition to communications with team members and guests, the other ongoing communication needs were with the various service providers. In most cases, I could manage the resources needed for podcasting without having to communicate with a live person. For these resources, all I needed was a valid email address. The rare times I had to talk with someone was when a critical resource such as the server hosting the web went offline. In most cases, email was all I needed. On those occasions, I would make a phone call or use instant messaging to contact technical support so they could address the problem.

2.1.6 Systems

In the beginning, there was no system. There were so many things to learn and do at the same time that I didn't begin to think about even writing things down until the first few episodes were done. Once I had some time to think about it, I broke down the podcast creation and launch process into several distinct stages, each of which could be accomplished with the help of specific instructions or procedures.

For the case studies in this manual, the systems that were directly related to producing podcast episodes included the following:

2.1.6.1 Overall Preproduction Planning

After going through the process of defining my overall mission and the role of podcasts in supporting that mission, It was clear to me that the podcast would focus on the subjects that were of interest to my web site's audience. The site had a mixture of content, with the most popular being high media interest events like plane crashes; aviation safety and security policy issues, and the analysis of individual aircraft accident investigation reports. The process for producing the factual portion of a podcast's content would also follow the same general process for developing written content for the web site.

2.1.6.2 Prelaunch Actions

The web site already had an audience composed of casual visitors to the site, frequent visitors to the site, and those who chose to be on one or more of the site's mailing lists. While researching the subject of podcasting and the experience of particular podcasts, it became quite clear to me that successful podcasts depended on three things, a well-designed RSS feed; making the podcast easy to find, both by search engines and by specialized podcast directories; and inclusion of the podcast within Apple's iTunes system.

This last item was particularly important for several reasons. First, in order to easily subscribe to a podcast, a user had to use some kind of software or online application. There were many free options available, but by far the most important one was Apple's iTunes software. It not only allowed users to search for and subscribe to podcasts within the iTunes database, it also allowed users to manage many different kinds of audio and video files, especially the most popular audio and video formats used by podcasters.

When creating the RSS feed, I followed Apple's instructions and made sure that the feed had all the information needed for iTunes, as well as the information needed by other popular online podcast directories. Appendix 5 goes into detail on the creation of the RSS feed for AirSafe.com's podcast, and Appendix 2 lists several of the more important podcast submission directories.

2.1.6.3 Launch Activities

The official launch of the podcast was in two phases. In the first, I placed the feed and the first episode in a podcast directory on my web site's server, uploading it using the FTP function that was an option for my Firefox browser. I tested the feed to make sure it was valid, and made sure that I could subscribe to the podcast using iTunes. I also made a podcast home page within the AirSafe.com web site, with links to the episodes, as well as links for both the regular RSS feed URL, and the unique URL generated by Apple for those who wanted to subscribe using iTunes. Keep in mind that there are two ways to subscribe using iTunes, by searching for the podcast within the iTunes store, and by pasting the podcast's iTunes URL into the appropriate location in iTunes.

This podcast page (at podcast.airsafe.org) gave visitors three ways to access the podcast:

1. By downloading or playing a single episode.
2. By subscribing through an RSS feed.
3. By subscribing through Apple's iTunes software.

The second phase of the launch was making the current audience for the site aware of the podcast. This was done primarily through the web site's mailing list. I also contacted a few owners of aviation safety web sites and encouraged them to tell their audience about the podcast.

2.1.6.4 Decision system to determine if an individual podcast should be made

The decision system was a simple one. I would create a podcast episode about a type of event that in the past had attracted a lot of media attention and web site traffic (plane crashes, hijackings, major policy decisions, releases of accident investigation findings for a major accident, etc.). I'd also make podcasts for other events if they had the potential to attract an audience and if it supported some aspect of the web site.

2.1.6.5 The Planning Process for an Individual Podcast

For each episode, the content of the podcast dictated what had to be done, but the overall process for each show was quite similar. process process was as follows:

- Come up with a show topic that is both relevant to AirSafe.com and that could attract a significant audience.
- Figure out what kind of content I need for that topic (either content I created or content I acquired from elsewhere).
- Figure out what other resources I needed (recording equipment, written or recorded consent statements from guests, etc.)
- Write the script that includes all the words that I would say in any pre-planned monologue, or that included an outline of any interview, or an outline of content used in the show but that I didn't create (for example, the contents of a radio talk show or a speech).

The two keys to the episode planning process are the outline and the script. The basic outline of each program including the following:

- **The introduction:** A one sentence welcome to the show followed by very short description of that show's topic (typically the show's title and episode number). This portion typically takes up the first 15 to 20 seconds
- **The overview:** A short description of what is in the episode that usually includes any necessary background information. Sometimes the introduction is complete enough to perform this function. However, sometimes I need to include background information to introduce a guest or a topic. This section is also short, typically less than 90 seconds.
- **The main topic:** Depending on the show, this portion could be as short as a minute and as long as about 45 minutes. The structure of this section depends on the subject matter. For example, a show about a plane crash would start with a summary of the basic facts like the date and location of the crash, the airline involved, the number of passengers and crew, and the number of fatalities. This would be followed by a review of the safety record and other relevant background information about the airline, aircraft model, and sometimes the country or location where the event occurred. If information is available, I would include factors that were suspected in the event. The last part of a plane crash show would include a description of the state of the investigation, and an identification of the group responsible for the investigation.
- **Call to action:** This is usually in the form of an invitation to visit a specific page in the AirSafe.com web site to obtain further information. If the call to action is to do something that does not involve AirSafe.com, I would still suggest a visit to an AirSafe.com page with that page having the links, telephone numbers or other information for outside parties. This is also a short segment, about 10 seconds.
- **Sign off:** Here I thank the listener using the standard closing line of “Thanks for listening, and I'll see you next time.”

An example script from one of my shows is included in Appendix 4.

2.1.6.6 The Content Collection and Creation Process

This process is different for each show, and which process I use depends on the type of show that I'm doing. The main types of shows were breaking news, radio or television interviews where I was the person being interviewed, original AirSafe.com podcast interviews featuring outside guests, shows featuring a specific aviation safety or security issue, and shows about the work of AirSafe.com:

- **Breaking news:** There is usually a significant spike in site visits and podcast downloads for aviation safety related events that are getting heavy media coverage, and it is important to quickly create and launch a podcast. Most breaking news podcasts deal with plane crashes, so I use the basic outline structure I described above. I would rely on a combination of major news media outlets, selected aviation safety sites, and media organizations near the site of an event to gather basic information on the event. I'd then write out the script for the show. If possible, I have someone else read the script back to me to see if it sounds right (my MacBook has a text to speech function, so if I can't find a human volunteer, I have my computer read it to me).
- **Radio or television interviews:** If my podcast consists of a radio interview or the audio portion of a television interview, I'd first review the interview and edit out those portions of the interview that I don't want to use. What remains would be the main topic of the podcast. For the overview portion of the podcast, I'd write up a synopsis of the interview and put that in the script. I'd also write up the introduction and call to action sections. I'd use the same standard sign off I use for all the podcast. I would also have someone read back to me the script, which would have word uttered in the podcast except for the content of the main topic.
- **Guest interviews:** This would be similar to shows featuring radio or television interviews in that the final written script will include every word from the podcast except for what was in the actual interview. I would also write the script after the interview was completed and the guest's portion of the interview was largely edited. Prior to recording the guest interview, I'd have a conversation or email exchange with the guest about what would be discussed and how the recorded interview would be used. Afterwards, I would thank the guest for volunteering to do the interview, and provide a verbal or written an outline of the subjects to be covered.
- **Highlighting an safety or security issue:** This type of show uses the same basic outline used for breaking news shows, but I would typically draw my material from different sources such as engineering studies or policy analyses.
- **AirSafe.com promotional show:** This type of show uses the same basic outline used for breaking news shows. The call to action section will always recommend visiting to a specific AirSafe.com page or to some other resource that is controlled by AirSafe.com or that would benefit AirSafe.com.

2.1.6.7 Collecting or Creating the Audio Content

The audio content for every type of AirSafe.com podcast comes from one or more of the following sources:

- A microphone connected to my computer and recording my voice using the Audacity audio recording and editing software (used on both my Windows XP and MacBook computer).
- Previously recorded audio content downloaded from the web, or from offline resources such as CDs or previous podcasts. One source that is very useful for interviews is conference calling

service that allows one or more guests to have a discussion and where that discussion is recorded.

- Live audio streams using programs such as Audacity, Skype, or Audio Hijack Pro. If I'm using my Windows XP computer, Audacity is my choice for recording a live stream created by a third party like a radio station. For the MacBook, Audio Hijack Pro does this same function.
- Telephone calls were recorded several different ways. I use Skype for online (VOIP) telephone conversations. If I'm using my MacBook, I use Audio Hijack Pro with Skype. For my Windows XP laptop, I use a combination of Skype and the Pamela recording software. Another telephone option, especially if I was away from my computer, was to use one of the free conference call services that had an option of recording calls (my favorite is Basement Ventures at <http://thebasementventures.com>). I sometimes used a conference call service to back up a Skype-based interview. I'd have the guest or guest call into the conference line system, and I would call into the same conference line using Skype (in combination with Audio Hijack Pro) on my MacBook. The big advantage for me was call quality. I would have two complete conversations, with the conference line usually having the best audio quality for the guests, and Skype having the best quality for my side of the conversation. I would then choose the best sounding version of each side of the conversation.
- For background music, I avoided potential copyright problems by only using music that was in the public domain or that intended to be used in podcasts. Two of my favorite sources are the site GarageBand.com, and the GarageBand program on Mac computers. I also find artists online who encourage the use of their music in podcasts, and I would use their material after first getting permission from the artist.

2.1.6.8 The Editing Process

The Audacity audio recording and editing program is used for all for AirSafe.com audio editing. This is a free program that can be easily download and set up to edit multiple tracks of audio input, and can export the final result as an MP3 file. While MP3 is not the only audio format you can use for a podcast, it is one that the most popular audio players (iPods, iTunes, QuickTime, Zune) can recognize. Resources for downloading and using Audacity are available in Appendix 1.

For those using a MacBook, GarageBand is a program that comes with the computer and can also do audio editing. However, for a variety of reasons, I've found Audacity to be superior for the kind of audio podcasts I have produced.

Audacity is a free, open source piece of software, there are plenty of web sites, podcasts, articles, and other material that will guide you through the basics. In Appendix 3, you'll see a checklist that I used to set up Audacity. Additional online resources are listed in the Resources section. For now, two good places to start are an article from Web Site magazine and a web site with written and video instructions.

Web Site Article: <http://websitemagazine.com/content2/PDFs/podcasting-audacity-registered.pdf>

Online Tutorial: <http://www.how-to-podcast-tutorial.com/17-audacity-tutorial.htm>

2.1.6.9 Launching a Podcast Episode

The launch process for a new episode was relatively simple. After the the episode was completed, the RSS feed was updated, and both the updated feed and the new episode were uploaded to my web site. Initially I would advertise the new episode through the web site's mailing list. More recently, I've developed a more comprehensive process for marketing each new episode. As you will see in Section 4, I used a combination of dedicated pages on the web site, mailing lists, blogs, and online press releases to make it easy for non-subscribers to find out about the podcast.

2.1.6.10 The Episode Evaluation Process

Each AirSafe.com episode has two goals, to have as many downloads (potential listeners) as possible, and to have listeners take some kind of measurable action. Each episode has at least one call to action at the end of the podcast, typically a request to visit a particular page for more information.

The podcast episodes, and any support web pages, were all hosted on the main AirSafe.com server. The ISP provided daily traffic numbers for both the MP3 files and the web pages, and I used Google AdWords for additional traffic data for the support web pages.

A successful episode often had a significant number of downloads in the first few days after it was published, followed by a higher than average number of daily downloads compared with the other episodes in the series. Also, there may be random and significant spikes if a high traffic site links to the podcast, or if there is a high interest by the news media in the subject matter in the podcast.

If an episode's call to action was a visit to a URL on the AirSafe.com web site, then I used my existing tools for analyzing web site traffic. I used other other measurements if the call to action was for the listener to do something that did not involve visiting a page on the site.

2.1.6.11 The Communications Process

This is one of the support processes that was largely in place before the podcast was created. I used the same tools for podcast related communications as I did for normal web site related business, so I made no real changes as a result of adding the podcast. The three most important tools were email, telephones, and mailing lists. I acted as my own production team, so most of my communications were with guest of the show, with those who were on the AirSafe.com mailing list, with podcast listeners or web site visitors, or with the service providers associated with the web site.

2.1.6.12 Marketing and Promotion Process

I used the existing marketing techniques that I had developed for the rest of the web site. The most important tools was the site's mailing lists, email accounts, and telephone resources (both traditional and online options such as Skype). I made very limited use of other popular online tools such as social networking sites and instant messaging. My most common marketing technique was to use the mailing list to send a media release type of mailing shortly after publishing a new episode.

After the podcast was in place for about a year, there were four additional online resources that I added to market the podcast: blogs, automated mailing lists, media release services, and Feedburner. The last was a service that enhanced the podcast's basic RSS feed, allowing me to do things such as add customized podcast subscription links to web sites or blogs, and by tracking subscriptions.

Blogs were used to publish support materials associated with each broadcast. Those materials usually

consisted of the transcript, and links to related resources within AirSafe.com. These blogs, like the main web site, were also indexed by the major search engines, so anyone searching for keywords related to a podcast might find either the blog or the web site in their search results. I eventually had two blogs where I would put podcast notices. The first blog had only podcast related posts, and the second contained all newsworthy items about the site. My mailing list service also allowed me to link one of the blogs with the main mailing list so that whenever the blog was updated with a new entry, the mailing list members were sent an email with a link to the blog post. That email service was also designed to allow me to send a programmed series of emails to new users. I used these introductory emails to highlight several web site resources. Several of those emails included information about the podcast, including invitations to subscribe.

The media release services were an additional way to market the podcast to the public. These services would publish submitted media releases in their online database, and that database was searchable for the major search engines. This gave me an opportunity to take the information that was published in the blog, alter it to conform to the basic structure of a media release, and make that release available to the public. By using a combination of the web site, the blog, and the media release services, I had three independent searchable online publications with links to each podcast episode.

My experience running the web site also taught me timing was very important for one type of podcast, breaking news items. Depending on when and where an event took place (typically a plane crash), I'd make an effort to produce and publish a range of information products as soon as possible. The first task was to add or expand to the material on the web site, closely followed by creating a podcast, adding a post to the podcast blog and AirSafe.com news blog, and sending out online media releases. The automated mailing list took care of emailing list members with a link to the podcast related posting. Each blog post or media release would also include a call to action, usually an encouragement to visit the web site and download a podcast.

2.1.6.13 Technology Evaluation and Implementation Process

Technology evaluation was split into evaluating the technology used in the podcast production process, and evaluating both new and established online services, software, collaboration tools, and publishing options to see which ones should be tested and considered for inclusion in the podcasting process.

The basic philosophy I used for evaluating the podcasting production process was that if it was working well enough, there was no reason to make radical changes. Once my initial recording and editing tools were in place, I made very few changes in the first couple of years. Buying a slightly fancier microphone was about as far as I went.

When it came time to upgrade my computer, I decided to purchase a MacBook, in part because unlike my Windows XP computer, the MacBook was set up to make it easy to make both video and audio podcasts. When I made the switch, I ended up not using the GarageBand audio editing software that came with the operating system because I found Audacity to be much more convenient for the type of recording and editing I was doing.

One unexpected benefit of using the MacBook was its built in text to speech function. I use it to read the drafts of my scripts. Hearing the words I wrote definitely helps to eliminate clunky or confused language, and also gives me ideas for changing the script that I wouldn't have gotten otherwise.

When it came to online services, I focused my efforts on those services that were free and that could

address production, distribution, or marketing issues with the podcast. Many of the services freed me from some of the time consuming tasks of running the podcast. I already mentioned how the blog and mailing list worked together to contact mailing list members about new episodes. Both the blogs and media release resources also reduced my workload. When I first started the podcast, the web site was my only option for placing support material for a podcast episode. Once in place, it would often be several days before search engines took notice. By using the blog and media releases, it was easier to publish content, and I had the flexibility of doing so from any compute connected to the Internet. Feedburner was also a time saver because I used the service to automatically send various podcasting directories information about new podcasts. It was a useful marketing tool because some of the information it provided, such as a breakdown of subscribers by how they subscribed, was not available elsewhere for as low a price (free).

2.1.7 Legal Issues

Most of the legal issues involving the AirSafe.com podcast had been previously addressed years before the podcast was launched. The technology of the Internet didn't affect the two key legal issues faced by the site, dealing with intellectual property issues and avoiding accusations of defamation. The latter was the easiest to deal with. The site dealt with aviation accidents and aviation safety policy, and when I launched the site, I was still an aviation safety engineer employed by one of the largest airline manufacturers in the world. I took steps to make sure that my outside activities would not conflict with my day job, such as working with the one of the company's senior attorneys to make it very clear that my work was separate form my employer. I also had some very strict rules about the site's content, mainly that all data would be from publicly available sources and that I would avoid speculation and stick with the facts when it came to talking about accidents.

While the main reason for taking a fact-based, open source approach to the site's content was to avoid a conflict of interest with my employer, it also kept me from coming close to being guilty of defamation, which is a legal term for a false statement that causes harm to someone's reputation, or that causes that person to become a target of public contempt, hatred, ridicule, or condemnation.

An unexpected event led to me taking significant steps to formalize much of what I was doing with the site. One day in 2000, I received a call from a law firm expressing concern about one of my pages. To make a long story short, CNN quoted some of the data from AirSafe.com in a critical story about Air Zimbabwe. The law firm informed me that their client was unhappy with CNN's story, and they wanted me to remove some of the data from my site. To make a long story short, I changed nothing about the site, but I changed many things about the way I did business.

Because my data was based on facts rather than speculation, I wouldn't lose a defamation lawsuit. However, if someone were to sue me, I'd be at risk of spending lots of money to defend myself. After hiring my own attorney, I created several basic legal protections for my business (emptying the AirSafe.com bank account in the process), and began to spend a lot of time learning how to protect my business.

2.1.7.1 What Does Copyrights Have to Do with a Podcast?

Understanding the basics of copyright and trademark law made me appreciate how important it was to protect anything that I created for the site. It also made me very aware of what I could or could not do when it came to using outside material for the site. When it came time to create the podcast, it was clear

that all the things I did to protect the intellectual property in the web site would be appropriate to the podcast. Among those actions were the following:

- Follow the rules when using the copyrighted material of others.
- Include a copyright notice wherever appropriate.
- Always getting permission from guests for audio or video recordings

For an audio podcast, rather than including a verbal copyright notice, I included the notice on all pages that supported the podcast. I also included a rather comprehensive copyright notice on the web site, which basically says that AirSafe.com owns the copyrights to anything sent to the site. Whenever I had a guest, I would have them consent to having their voices recorded, and also say that their recordings may be used anywhere by AirSafe.com. That consent would have to be recorded in some way, either as an email or in a recording. This step was completed before the interview started.

2.1.7.2 Fair Use and Public Domain in the Podcast

Because much of what I did was news or public policy related, I could freely use bits and pieces of copyrighted written or recorded materials, such as short portions of a news broadcast, within a podcast episode. Also, many of my shows were based on factual information, which can't be copyrighted, even if the data were in a copyrighted document. Material in most government documents, for example airline accident investigation reports, are usually in the public domain as well.

2.1.8 The Podcast

The podcast adhered to the mission of AirSafe.com, which was to provide the public with useful information about aviation safety and security. It also adhered to my philosophy of how to satisfy my audience—Give the people what they want, and just a little bit of what I think they need. While the podcast was a completely different way of delivering content, I saw no reason to change my approach when it came to what type of content would be in the podcast.

Shortly after I began producing episodes, it became clear to me that the strength of the web site was presenting reference information, especially data and analyses of data, that would not have to be frequently changed or created and that could be organized in a consistent and logical way. Being able to link between pages allowed me to build into the web site an ability for a visitor to flow smoothly from one subject to another.

Podcasts had different kinds of strengths, one of which was the ability to engage the audience on a different level. It wasn't a replacement for the mostly text based information on the site, but it was an excellent resource that supplemented existing information. A podcast could also stand on its own, which was necessary since I planned to allow people to subscribe to the podcast or download individual episodes without having to visit the site.

Generally speaking, you make a podcast in order to satisfy an audience. The more you know about what it is you want to do, the better your podcast will satisfy your audience. The case study will take you through the development of two podcasts, one audio and the other video. The case studies will provide the details of the podcast and why they were designed the way they were, but what it doesn't show is that the process of creating a podcast is ongoing. Once you get going, you'll have a better idea of what you have to do to keep your particular podcast relevant to your audience.

When it came to the overall podcasting process, I followed the suggestions I mentioned earlier:

- **Start with reasonable goals:** One of the early goals was to provide content that expanded on material that was already in the site. Once I got more experience, my goal was to produce shows more frequently.
- **Start cheap:** Using the capabilities built into my computer, and free software I downloaded from the Internet, I only spend about \$100 for a microphone and associated hardware. If my notebook had a built-in microphone, something that is standard for most new laptops, I would have spent no extra money.
- **Start simple:** The early shows consisted of me as the narrator, with no guests, and only a few extras like opening and closing music. Over time I added things like interviews or combining and editing multiple tracks of audio content. What was clear to me after few shows that whether it were a simple show or a complex one, the more planning I did a head of time, the easier the show would be to complete.
- **Start with reasonable goals:** One of the early goals was to provide content that expanded on material that was already in the site. Once I got more experience, my goal was to produce shows more frequently.
- **Always have a plan:** This piece of wisdom took a while to develop. Things always went more smoothly, and with much less aggravation, if I had a plan in place for a show. If it was just me talking, I'd write and rewrite my script before I recorded the show. If I had a guest, I'd have some questions lined up ahead of time. If I was recording a phone interview, I'd make sure my equipment was working well before show time.

2.2 The Video Podcast: The Conversation at AirSafe.com

About a year after I began the audio podcast, I decided to look at video podcasts. This wasn't a different podcast, but rather an expansion of the original podcast to include video episodes as well as audio episodes. While the process for a video podcast was in many ways exactly like that of an audio podcast, the marketing aspect was entirely different. The biggest difference is the way online users find or distribute videos is very different from the way that audio is discovered and distributed. To understand that difference, just think of YouTube. Launched in December 2005, it quickly became extremely popular (the first big hit was the Saturday Night Live rap video “Lazy Sunday”). Just as iTunes is the 900-pound gorilla of audio podcasts, YouTube played that role in video. However, I'm getting ahead of myself. Read on and you'll see how AirSafe.com's video podcast developed.

2.2.1 The Mission

There was no difference between the basic mission of the audio and video version of the podcast. It was conceived as a video version of the audio podcast. The main difference was in the tactics used to accomplish that mission, tactical differences that I'll discuss below.

2.2.2 The Team

I used the same team I used for the audio podcast. I was able to do my own video editing work (details below), so no additional people were added to the team.

2.2.3 Leadership

The same story held true for leadership. I didn't need to make any changes.

2.2.4 Resources

In order to create and distribute video podcasts, I used a few additional resources:

- **Recording Hardware:** Video podcasts have three kinds of visuals, digital photos, video, and other graphics. I used a digital camera to capture some visual content. In my case, I already owned a camera, so I made no additional purchases. I also used my existing audio equipment from my audio podcast for the audio for the video podcast.
- **Recording and Editing Software:** When I first began my video podcasts, I used the Windows Movie Maker program that is included in Windows XP and Windows Vista. When I purchased a MacBook, the iMovie video editing program was included. For me, iMovie was much easier to use, so that is now my main editing program.
- **Making the Podcast Available:** The video podcast was distributed using the same web site resources and RSS feed as the audio podcast (allowing video podcasts to be accessible through iTunes as well). I also used video sharing sites like YouTube and Google video for distribution. Visitors using the internal search engines from these sharing sites could find these videos, and since each video had a unique URL, individual blog and web site owners could link to these videos as well.

- **Marketing the Podcast:** All of the tools used for the audio podcast was used for the video podcast. In addition, when the video podcasts were mentioned in an AirSafe.com web page, blog, email newsletter, or other communication, links were provided for the version of the show located on the web site, on YouTube, and on Google Video.

From the very beginning, the video podcast was designed to be backwards compatible in that those who only had the capability to listen to audio podcasts were able to download the audio track of the podcast. Also, the shows were written so that all the essential information in the show was contained in the audio podcast.

- **Distributing the podcast:** The same distribution system used for the audio podcast was used for the video podcast. However, unlike the audio podcast where there was only one format used (MP3), two formats were used for each video podcast, WMV and either MP4 or M4V. The first format was used by the Windows Media Player, the program that is included in computers running the Windows operating system. The second and third formats were compatible with the iTunes or the Quicktime media players, and these formats are compatible with every version of the iPod with the ability to play videos. By having these three video formats, anyone using the most common personal computers and video capable iPods could play podcast episodes.

YouTube and other video sharing sites were also used to distribute the video episodes. I included supplemental information for each video that was uploaded to a video sharing site. This information consisted of a description of the video, and relevant tags which are the search keywords that are associated with the video. The description and the tags were taken directly from the information that was in the RSS feed for that episode.

2.2.5 Communication

The communications processes and procedures for the audio podcast was used for the video podcasts.

2.2.6 Systems

The production of a video podcast episode was really three separate processes: the system to create the audio track, the system to create the visual elements, and the system to coordinate the the audio and visual elements in order to produce each video podcast.

2.2.6.1 Overall Preproduction Planning

There was no real difference in most areas of preproduction planning compared to the audio podcast. The one exception was the length of the episode. Because YouTube was used as one of the distribution methods, and because YouTube was by far the most popular video sharing resource, the videos were designed around YouTube's key requirements, such as being less than 10 minutes in length. It was possible to break up longer videos into shorter segments, but I decided to keep things simple and keep all the video episodes shorter than 10 minutes.

2.2.6.2 Prelaunch Actions

Most prelaunch activities were covered by the audio podcast. The RSS feed with is the element that allows podcast subscription is designed to work with many types of files, including the WMV, MP4, and M4V files of the AirSafe.com podcast. The only additional task was registering with all of the

video sharing services I planned to use.

2.2.6.3 Launch Activities

There was no separate launch activities associated with the video podcast, since the video podcasts would simply be another episode in the already existing podcast.

2.2.6.4 Decision system to determine if an individual podcast should be made

The decision to make a video podcast depended on whether the podcast had compelling visual elements. If there were none, I would only produce an audio episode (MP3). If there were visual elements, I'd create three versions of each episode, the audio MP3 version, a WMV video version, and either a MP4 or M4V video episode.

2.2.6.5 The Planning Process for an Individual Podcast

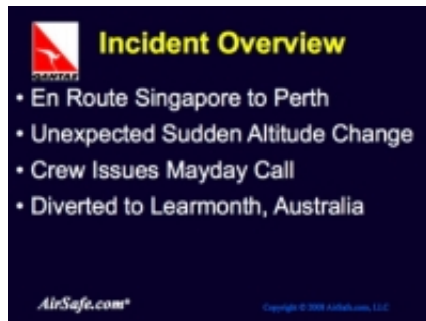
The main difference between the planning process for the audio and video episode is the addition of a plan for the visual elements. The style of the video podcasts were very influenced by PowerPoint type presentations, in part because most podcasts were informational in nature. Because the videos had to be usable if played on an iPod screen, these slides had relatively large text sizes.

Like it was with audio podcasts, the two keys to the episode planning process are the outline and the script. The typical visual elements in a video program included the following (example photos taken from an AirSafe.com podcast):

- **The introduction:** This usually has two slides, with the first consisting of a dramatic picture followed by a title slide. The first slide could be replaced with one or more pictures, or a short video introduction (For some episode, I upload a number of still photos or other graphics to Animoto at www.animoto.com and have the service create a dynamic trailer based on my inputs.



- **The overview:** This usually has two to four slides, some with text and others with appropriate graphs, charts, or photos. Photos or another video clip could replace most or all of the visual portion of this section of the podcast.



- **The main topic:** The mix of visuals depends on the show, but typically it would be both text-heavy slides with information, plus photos, graphics, or video to illustrate the information. Photos and graphics could be within a slide with headlines and other text information, or it could be a combination of photos and video clips. These visual elements could have captions that would display periodically during the video segment (see below).



- **Call to action:** This is a single slide that prominently features a URL for the viewer to visit.



- **Sign off:** While I thank the listener at the end of the show, I display the credits page, which includes the copyright notice and credits for the providers of images in the show.



2.2.6.6 The Content Collection and Creation Process

Because the AirSafe.com video podcasts are designed to have both a video and an audio version, the overall design is that of a PowerPoint type presentation supplemented with slides, graphics, and video clips. Depending on the subject and the availability of appropriate visual elements, the PowerPoint type slides may dominate on some episodes, while photos, visuals, and video may dominate other episodes. I would build the audio track exactly the same way I would with an audio podcast. The unique things I do for visual elements of the video podcasts include the following:

- **Breaking news:** For aviation events, I may include elements such as photos, graphs, news footage, and passenger video uploaded to YouTube.
- **Radio or television interviews:** Radio interviews tend to be longer format shows, typically beyond the 10 minute limit that I imposed on videos, so these were kept as audio only shows. Television interviews tend to be relatively short, and of course they include video content, so they were ideal for video podcasts.
- **Guest interviews:** Like radio interviews, these also tend to be longer format shows that are audio only.
- **Highlighting an safety or security issue:** This kind of show usually had graphics culled from news sites, government reports, and aviation organizations. Also, PowerPoint type slides worked well with this kind of show.
- **AirSafe.com promotional show:** For these shows, I included photos or graphics from the product or service that is being profiled.

2.2.6.8 The Editing Process

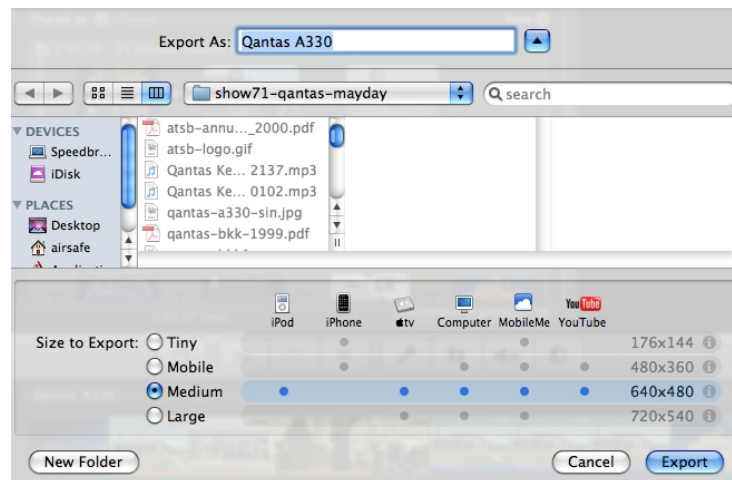
Editing is a two step process with the audio editing happening first. My first video podcasts were on a Windows XP computer, and I used Audacity for audio editing and Windows Movie Maker for video editing. For the video editing, the organization of the audio track drove how the visual elements were arranged, with visual transitions coordinated with the transitions in the audio track.

Windows Movie Maker allowed basic logos and captions to be placed on top of video segments. However, since most of the visual elements were PowerPoint type slides, I used PowerPoint or the OpenOffice presentation program to create slides. Those slides were exported as GIF files, and those were then placed into the video using Windows Movie Maker.

When I transitioned to a MacBook, I kept the same basic process, but I used iMovie in place of Windows movie maker, and Keynote, Apple's presentation manager program, to create the slides (also exported as GIF files). However, I kept Audacity as the audio editing program, in large part because I found it easier to edit audio using Audacity than with using GarageBand. Appendix 3 has a very basic checklist I used to set up the parameters of video podcasts.

2.2.6.9 Launching a Podcast Episode

The launch process for a new episode was relatively simple. After the editing of the episode was completed within GarageBand, I exported the show into a format that could be viewed on iPods, iTunes, and Quicktime. An example of one such export is in the graphic below.



Once the RSS feed was updated, both the updated feed and the new episode were uploaded to my web site. Unlike an audio podcast that was only made into an MP3 file, video episodes were turned into an MP3 file for the audio portion (recall that this audio track was completed before the video was completed), an M4V file (output from iMovie), and a WMV file. The M4V file was the one I would upload to various video sharing sites, but I would have the audio file and both video files available on the web site. I'd also have links to the YouTube and Google Video versions of the show.

Two online services made this part of the process easier. TubeMogul at TubeMogul.com allows me to upload one video file, and distribute it to simultaneously to several video sharing services. While I linked to the YouTube and Google Video versions of the site from the web site, I also had each video available on services such as AOL video, Veoh, DailyMotion, Yahoo! Video, and Metacafe

When it comes to video episodes, you have two basic formatting choices: either a 4:3 ratio (like a traditional television show), or a 16:9 ratio (a widescreen format). Currently, Youtube has a 16:9 format as the default, and beginning in 2009, all new AirSafe.com video podcasts were created in the widescreen format.

Video podcasts are promoted using the same methods I use for audio only podcasts, and in addition I use the video sharing services I mentioned earlier. On YouTube, I used their option of creating a “channel” at <http://www.youtube.com/airsafe> that has links to all of my uploaded videos, plus background information about the podcast.

2.2.6.10 The Episode Evaluation Process

Video podcasts evaluated the same way as audio podcasts. I use additional traffic services through TubeMogul to determine traffic through all the video sharing services I use (except Google Video, which doesn't generate traffic figures for each video). One thing that was clear very early on was that for every video podcast, there were substantially more views through YouTube than there were downloads from any of the three types of audio or video files located on the web site's server.

2.2.6.11 The Communications Process

I used the same process as the one I used for the audio podcasts. YouTube also provides a means for visitors to leave feedback, or to contact the author of the video. I made limited use of this function.

2.2.6.12 Marketing and Promotion Process

I used the same process as I did for the audio podcasts, and in addition I maintained all the video episodes on the various video sharing sites.

2.2.6.13 Technology Evaluation and Implementation Process

This process was covered in the AirSafe.com audio podcast case study.

2.2.7 Legal Issues

The issues associated with the video podcast were no different from those of the audio podcast, and were addressed in a similar way.

2.2.8 The Podcast

The video podcast was never meant to be separate from the audio podcast. The goal was to keep the differences between audio and video podcasts to a minimum. The areas where the two differed significantly include the following:

- **Start with reasonable goals:** For my early video podcasts, my goal was to become familiar with the differences between producing and distributing audio and video episodes. Once I became familiar with these differences, it made it easier to make adjustments to take advantage of what the video format had to offer over the audio format.
- **Start cheap:** I didn't plan to buy additional equipment. I found that it was relatively easy to make compelling episodes using graphics made from presentation programs, video clips from outside sources, and still images from my own collection or from various online sources.
- **Start simple:** Early on, my visual content consisted of slides, still photos, and a few captions. I've since added video clips to the mix, but the core video style hasn't changed.
- **Start with reasonable goals:** One of the early goals was to provide content that expanded on material that was already in the site. Once I got more experience, my goal was to produce shows more frequently.
- **Always have a plan:** The early plan was a technical one focused on getting the video production process under control. Once that was done, the plan was to use available resources, especially free online resources, to systematically expand the audience for the video episodes.

Part 3: Example of a Podcast Plan for a School

If you have gone through the preceding case studies, you have more than enough background to create your own podcast. In what follows, I'll take you through a typical podcast creation process process. I'll put the example in a somewhat different context from what happened with AirSafe.com. Instead of supporting the rather narrow goals of an informational web site, this example assumes that the podcast will support the mission of a school. I'll compare the issues the school would face with the issues faced by AirSafe.com, and suggests ways to deal with those issues.

3.1 An Overview of the Eight Things You Need for a Successful Podcast

While a school may be a nonprofit educational entity that would have a completely different mission from AirSafe.com, anyone involved with a school's podcast will still have to deal with the same kinds of planning, organizational, and legal issues. I'll assume that the podcast will involve students in a significant way, and will be responsible for most or all aspects of any podcast involving students.

1. **Mission:** The mission of the school and the mission of the podcast should be one and the same since every aspect of of school life should support the mission in some way. If you can't figure out how the podcast supports the mission, then there is no need to go forward.
2. **Team:** For the podcast to have any useful educational value, students must have a critical role in the planning and development of the podcast. Because of the limitations that students normally have, for example limitations on making contractual obligations on behalf of the school, there will be some key areas where faculty and staff must take the lead. In all other areas, students should be free to do as much as they are willing and able.
3. **Leadership:** Like with just about any formal, school-sponsored activity involving students, there will an adult who is responsible for that overseeing activity, and usually one or more students who are responsible for at least some decision making, planning, or management associated with that activity. Given that many children and teens are able and willing to master the tools and techniques associated with the podcasting process, they should also be encouraged to take the lead in producing and managing the podcast.
4. **Resources:** If a school has Internet access and if students have regular access to one or more personal computers, then most of the resources needed to produce a successful podcast already exist.
5. **Communication:** If a podcast episode or podcast series were to be created and used completely within the school by faculty, staff, and students, then there may not be any significant communication issues. If there is a need to contact people outside of the school, there will definitely be a need to come of with clear rules as to who can communicate with the outside world and what role the faculty or staff members have in that process.
6. **Systems:** There should be no significant differences in what systems a school would use to create, distribute, or market a podcast.
7. **Legal Issues:** In the US, the most important legal issues that would affect most schools is that

to use most of the services related to distributing or marketing a podcast, users have to be at least 13 years old. Also, school rules may limit the role that faculty, staff, or students can play in the podcasting process.

8. **The Podcast:** Once again, the podcast is at the end of the list. True, the idea of making a podcast is likely to be far more exciting to the students than the idea of working through organization or legal issues. However, the key to a successful podcast, whether in school or out of school, is to have a firm idea of the importance of the other seven areas before everyone heads for the cameras and microphones.

3.1.1 The Mission

A podcasting project should not be the reason a school creates a mission statement. Any school should have some kind of mission statement written down somewhere. My own theory is that any good mission statement should have two qualities: first, the average ten-year-old should be able to understand it, and second you should be able to say it in ten seconds or less. If the mission statement doesn't meet these requirements, then it should be rewritten entirely, or a shortened version should be approved by the school that does meet these criteria.

3.1.2 The Team

The roles played by the team don't change for a school-sponsored podcast, but some roles are best filled by either a student, and others by a faculty or staff member.

Technical manager: This person is responsible for overseeing hardware, software, and service resources. While a student may fill this role, it is likely that a school already has a staff member or teacher who fulfills this role.

Legal advisor: In addition to the regular legal issues like copyright and fair use, schools have additional limitations, often based on school policies, when it comes to students. It is probably best to have a teacher, an administrator, or other school employee be responsible for dealing with legal issues.

Episode producer: If it will be a student-oriented podcast episode, then one or more students should take on that role, with teachers or other adult advisors in a support role.

Talent and content wrangler: Like the episode producer, this role is best if it is student-led.

Podcast manager: A successful podcast will likely last for years, and that longer term focus is best provided by a member of the faculty or staff.

Marketing manager: This is likely a shared responsibility between the students and the adults. Coordinating some marketing efforts will involve entities outside of the school, so this is best done by an adult, but creating and testing various marketing strategies, especially new ones, is probably best led by the students.

Fulfillment manager: Since this will involve using outside online resources, this is best done by an adult.

Technology advisor: The task of evaluating the relevant technology and making recommendations on what to use is best done jointly between students and staff since children and adults tend to have a

divergent, though complimentary, approaches to using online technologies. Whether a student, staff member, or teacher leads this effort is secondary.

Podcast Mentor: Finding a person or group that has experience producing podcasts and a willingness to work with a school is ideal, but finding that combination may be difficult. Fortunately, there are a number of resources, including books, web sites, blogs, and other podcasts that can serve in that mentor role by providing both advice and examples of what to do and what not to do.

3.1.3 Leadership

Realistically, it is unlikely that an elementary school would have students with both the capability, motivation, and maturity to manage a podcast. In a middle school or a high school, it is also unlikely that any podcast can be made unless the leadership of the school has the willingness to provide the necessary support, as well as the willingness to let the students assume the responsibility of running large parts of the show. A podcast is similar to any other ongoing student run organization or ongoing project in that without ongoing leadership contributions from both students and staff, it won't survive.

3.1.4 Resources

The resources needed for a school sponsored podcast are no different from the resources used for audio or video podcasts that were described in earlier sections.

3.1.5 Communication

A school-based podcast provides an excellent opportunity to teach students several things about the importance of communication within the school and with people and organizations outside of the school. Internally, everyone involved with the process will have to become comfortable with checklists, procedures, production manuals, and other written material that make it much easier to both have a consistent look and feel to the podcast, and to smoothly bring new students into the production process.

Developing the production process is a collaborative effort, doing so should help to bring the school community together in two ways. First, by encouraging those directly involved with the podcast to communicate with one another, and second by providing a tool for communicating both within the school and with the larger community.

Podcasts, especially those that are designed to be accessed by the general public, also make it necessary for the school to develop an external communication policy, or to follow an already existing policy. A school should already have rules in place that deal with any communication a school has with the outside world, especially online communications like email and instant messages. That policy should be well understood by anyone involved in the podcast, especially students. Probably the easiest thing to do is to designate a single faculty or staff person to coordinate any external communications.

3.1.6 Systems

Podcasting systems are associated with tasks that fall under one of two general categories: those that are done once and those that done every time a new episode is created. How those systems work will be no different than the way I described them in earlier sections. Who is involved in creating or operating

those systems will depend on both the system and the most sensible role that should be played by students, staff, or outsiders.

The systems that were directly related to producing a podcast series included the following:

- **Overall preproduction planning:** Preproduction planning for the initial podcast, or for any major revision of the of the school's podcasting process, has to involve both the students and the staff. This is one of those tasks that represent a learning opportunity for the students and the staff as both sides get a better understanding about how they view the Internet and what it can do for the school.
- **Prelaunch actions:** Some prelaunch activities, specifically creating an RSS feed, are one time activities that are best performed by the school's technical staff. Most of the activities that will be done for the first time, and that will be ongoing, such as creating the podcast episode or initial marketing efforts, should be led by the students. A one time only prelaunch activity that should be done jointly is coming up with the name of the podcast.
- **The podcast launch process:** Enthusiasm will be at its height when the podcast launches. This is the time to get as many people involved as possible.
- **Decision system to determine what additional episodes should be made:** This again is a time for all sides to put in their two cents, and to get everyone to agree on what kinds of shows will be made.
- **The planning process for an individual podcast:** With the exception of a microphone, which can be purchased for well under \$100, all the resources needed should be readily available to most schools. At the beginning, everyone should be made aware of what is involved in the process, and also aware of who is responsible for managing those resources, and what resources (specific computers, time or space set aside for interviews or meetings, etc.) will be made available.
- **The content collection and creation process:** This aspect should be largely the responsibility of the students, more for practical reasons than anything else. Given that the means by which content can be collected will constantly change and expand (Skype, online videos, live audio streams, and plain old telephones just to name a few), it is much more likely that the students will be much more willing to master and exploit these new and different ways of getting content.
- **The editing process:** The staff of the school should stay away from this activity, except to give advice as to how the final result should look or sound. After all, in the average school, who is more likely to have the extra time and energy to do the detailed and meticulous task that is audio or video editing?
- **The episode launch process:** Because each new episode requires an update of the RSS feed this will likely be the responsibility of whoever updates or manages the school's web site, blogs, mailing lists, or other online resources used to host the podcast files or promote the podcast to your intended audience.
- **The episode evaluation process:** This is another task that is best done by all involved.

Other systems that were always running in the background are related to your overall online strategy. While these systems benefit the podcast, they also will likely also support all of the other things that you do online:

- **The communications process:** External communications, including any contact with potential guests, and podcast subscribers without any previous connection to the school, should be run through whatever process the school has for all external communications.
- **Marketing and promotion process:** For those aspects of marketing and promotion that go beyond the students, staff, families, and other parts of the school's immediate community, the creative parts of it should involve everyone associated with the podcast, the execution (emails, letters, web site updates, etc.) should pass through a responsible staff member.
- **Technology evaluation and implementation process:** Nearly all podcast related technologies and resources involve some action or activity that must be done by or approved by faculty and staff. That includes things like downloading free software, trying new online applications or tools, or buying new hardware or software. On the other hand, most of the suggestions of what new innovations to try will likely come from students, who are far more likely to be exposed to new online and offline technological innovations. Leadership in this part of the podcast program will likely come from the staff side of the school.

3.1.7 Legal Issues

Schools are subject to the same legal restrictions as anyone else when it comes to issues like copyright and libel. One of the legal areas where schools have to pay particular attention are those US federal laws concerning online privacy of children. The most important of these is the Children's Online Privacy Protection Act (COPPA), which became law in 2000. In short, COPPA requires that web sites get permission from an adult before collecting information from children under the age of 13. The practical effect is that for most free online services, children under the age of 13 can't sign up for an account. For schools, that means that any online service that requires registration can't be used unless a school staff member is involved.

This is probably a minor point, since any student at the school will have to abide by the school's computer and Internet use policy. Whatever that policy is should be reviewed in light of how the school will interact with the Internet in order to run a podcast. For example, if the Internet use policy expressly forbids students from downloading or uploading files, or from using certain services such as YouTube, then either the policy should be changed to allow students to do that, or the school's podcasting procedure should be adjusted to comply with the policy.

Copyright

The good thing about copyright is that it is automatically given to original works like podcasts. This gives the school the right to use and reuse any podcast material in any way that it pleases. While copyrights are a good thing, the school should also take basic steps to protect that copyright.

One thing that should be done is to make sure that the school can use the raw material that makes up the podcast. Most schools have some kind of process where parents grant the school permission to use a child's image in school publications and the like. The school should obtain the same sort of permission to use a student's voice or image in podcasts. For outside guests who may be a part of

podcast, for example someone who is interviewed by the students, there should be some kind of written or verbal permission from that guest to use their voice or image. At AirSafe.com, that is usually done by either having a guest responding to an email where I ask for that permission, or by recording their verbal acknowledgement at the beginning of an interview.

Fair Use and Public Domain

Schools have a lot of leeway when it comes to using copyright material for educational purposes. In short, almost anything goes. However, when it comes to a podcast, a school has to be careful. It's OK to use a song from the latest pop sensation in a presentation that will be used only in class, but it may be a big problem if that song is used in a podcast episode that is available to the public. When in doubt, avoid using anything that is not clearly in the public domain.

Privacy and Security

The same kind of precautions that the school takes for printed publications or the web site should extend to the podcast. Common sense protections include not using a student's full name, address, schedule, or contact information in any part of the podcast.

3.1.8 The Podcast

Have you heard the joke about the dog who spends all day chasing cars, but is totally confused about what to do the first time it actually catches one? Well, don't be that dog. Think of the audience as the car. Once you catch its attention, you have to have a plan in place to keep their attention. The following suggestions should give you a better chance at a successful podcast:

- **Start with reasonable goals:** As you have seen from the rest of this document, there are a lot of steps in the podcasting process. Set your schedule based on what has to be done before the first podcast launches, and on the amount of time and energy you and the others involved in the production can give to the process.
- **Start cheap:** If you have Internet access and basic personal computers, you really don't need to spend significant amounts of money. More specifically, put a \$100 limit on all initial expenditures, including the kickoff party you should have after you launch the podcast.
- **Start simple:** How simple? How about an audio-only podcast that has no more than three people in speaking parts and no additional music?
- **Start short:** How short? Take a poll of the students in the school and find out the length of the most popular music video of the day. Make sure that the first five podcasts are at least 30 seconds shorter. Is this an arbitrary time limit? Yes it is. Do you have a better idea for the ideal length of a podcast? If you do, write to me at tcurtis@airsafe.com.
- **Always have a plan:** That plan should be written, and it should be less than a page long for each major function, such as a checklist for routine actions to be completed for each podcast, the proposed script for a show, or a list of tasks to be completed after each show is finished. Remember, if the podcast is to be an education tool, the process can't just reside in the minds of a few enthusiastic students and staff members, it has to be in a form that future students can learn from and build on.

Part 4: Beyond the Basics

As I've said before, podcasting and the Internet keeps a-changing whether I like it or not. One of the positive benefits of technological turmoil is that there is always something new that worth at least a try. Most of them didn't work out too well, but the following were successful in various ways. All of the following efforts were described in some detail in the sections of this document that discussed the marketing efforts of the AirSafe.com podcast.

4.1 Blogs and Blogging

I'll skip the usual hoo-ha about blogging and get to the point. Blogging, especially the kind that is done using free services like Blogger and WordPress, allows anyone to quickly create a web site that allows users to very easily add postings. I use a dedicated blog as one way to inform the audience about each new episode. Depending on the episode, a post may have a partial or full transcript, links to the location of the file containing the podcast, and links to associated material. Also, the blog has links for subscribing to the podcast directly or through iTunes.

4.2 Mailing Lists

I had a web site for almost 10 years before my first podcast. Over that time I developed a mailing list of frequent visitors who also wanted to keep in touch by email. I used this list to tell them about items of interest, including new features such as the podcast. It was a natural progression to use that list to send out news of new episodes as soon as they were available.

4.3 Blog and Mailing List Combinations

One of the services I use is an automated mailing list that performs a number of interesting functions, one of which is an option that ties the mailing list to a particular blog. In short, whenever a post about a new podcast episode is added to a blog, everyone on the mailing list gets notified about the new podcast, which of course increases the number of people who will hear the podcast.

4.4 Online Press Releases

There are a number of free press release services, such as PRLog and OpenPR.com that allow you to publish a press release that can be easily found on search engines like Google. This is good in that people who may not know about your podcast, but are interested in subjects covered by the podcast, may find it during a Google search on a subject.

4.5 Feedburner

This online service at feedburner.com has a variety of functions that make it easier to promote your podcast to the general public. The biggest benefit is that it makes it easy to track how many people are subscribing to the podcast and makes the process of subscribing to the podcast easier. For details, visit the site and check out the various options available to you.

Appendix 1: Downloading and Using Audacity

by Dr. Pat LeMay Burr and Joseph Kirby, Web Site Magazine, May 2008, pp. 34-35, accessed 29 September 2008 from <http://www.websitemagazine.com/content2/PDFs/podcasting-audacity-registered.pdf>

If you are the least bit intrepid you can add value to your website with a podcast in a matter of minutes. The tools you need include free, open source Audacity software and a good headset microphone costing less than \$30. If you have these items, then you're ready to go.

Audacity Software

Audacity reproduces recordings — ranging from voice memos to arias and compressed business podcasts — making them ready for posting online.

You can download, install and use Audacity without any associated costs or licensing problems. As is common with open-source software, there exists a loose-knit community in cyberspace offering help and adding improvements.

Audacity is an ideal utility for use in growing businesses with limited budgets, by moderately experienced techies who have no new software phobias, and is particularly fun for people who are not afraid to delete first efforts then try again.

Audacity Applications for a Website

Audacity allows you to create, compress and post a variety of online audio podcasts to tell your organization's story, explain how to use products and services, describe how to find your place of business and detail how to take advantage of special offers of the week or month. Such product demonstrations, how-to podcasts and simple repair advice audio can enrich a site immensely.

Interviews with happy clients, advance notice of new services, offers of qualifying for free delivery and directions for how to place orders can also act as positive shopping reinforcements for customers. The podcasts may also be added to various pages and may feature different voices, in addition to your own.

Getting Started

Audacity records the podcast to an AUP file extension, and as long as you stay in the AUP file extension format, you can continue to edit the file you have created. When you are satisfied with the final product, export the AUP file using the option under FILE. The LAME software encodes it, and it becomes an MP3 compressed file. More on this later. For now, the two download sites are:

1. Audacity 1.2.6: <http://audacity.sourceforge.net/>
2. LAME MP3 encoder: <http://lame.buanzo.com.ar/>

Step 1: Download Audacity and LAME MP3 Encoder

In your browser, navigate to <http://audacity.sourceforge.net/>. Click on the "Download Audacity 1.2.6" link. After the new page loads, go to the recommended download link and click "Audacity 1.2.6 installer." Choose SAVE FILE when the download window pops up.

Next, navigate to a location where you would like to save your files. At this location, create a new folder in which you will store your new file. Type in a name for your new folder— something like “PODCAST TEST”— and ENTER. Then, double-click the folder, give your first test file a name and SAVE. After completing these steps, close any open windows.

To complete the download process, you must download the LAME MP3 encoder. This file is linked from the Audacity Web page, so return to the Sourceforge site.

After navigating to <http://audacity.sourceforge.net/>, click on the “Download Audacity 1.2.6” link. Go to the “Optional Downloads” area and select “LAME MP3 encoder.” On the new page, choose to go to the “LAME Download Page” under the Windows subheading.

Next, choose to download the file `libmp3lame-win-3.97.zip`, and click OK to save the file to disk. Store the file in the folder that you created earlier, (where the Audacity file is already stored) and SAVE. Finally, close any open windows and prepare for the next step.

Step 2: Install Audacity

Both software files are now downloaded, but neither is yet installed. So, in this step, we will complete the Audacity installation.

Go to the location where you saved the file and double-click “`audacity-win-1.2.6.exe`.” Then, in a sequence of three clicks, choose NEXT, then (after reading) I ACCEPT THE AGREEMENT, then NEXT.

Continue to click NEXT until you get to the INSTALL option then choose INSTALL to begin the installation of the main files.

After you complete the step above, uncheck the box for “Launch Audacity” and click FINISH to close the installation program. Finally, delete the installation file that is no longer needed and go to the next step.

Step 3: Extract the Lame MP3 Encoder

Note: This section assumes that you have WinRAR, an extraction utility, installed. This utility, or one like it, is needed to extract the LAME MP3 from its ZIP format. WinRAR 3.71 is recommended and may be downloaded from <http://www.win-rar.com/download.html>.

Now that Audacity is installed, extracting the LAME MP3 encoder is next. This encoder “exports,” or converts the AUP file extension sound recordings into a compressed MP3 format.

Go to the location where you saved the LAME MP3 encoder zip file and double-click “`libmp3lame-win-3.97.zip`.” Close the purchase box window that pops up, then double-click the “`libmp3lame-3.97`” folder.

Highlight the “`lame_enc.dll`” file that sits within the zipped archive, and then click EXTRACT TO in the menu bar area. Select the location where you would like the extracted file to go, click OK to begin the extraction and close any open windows.

When you have completed the above steps, the “`lame_enc.dll`” file should be in a folder called “`libmp3lame-3.97`.” This folder will be located in the storage location that you specified earlier. Remember where this file is located, because you will need to access it later.

Step 4: Set up Sound Properties

Now is the time to set up the speaker and microphone sound properties. This involves first checking the sound properties in Audacity, then checking the sound properties in Windows.

First, start the Audacity program by double-clicking its shortcut on the desktop, then check the audio settings in the menu bar to ensure that speaker and microphone volumes are set at the desired level. Before testing your settings with a recording, ensure that Window's sound properties are also correctly configured.

To audit Window's sound properties, right-click the speaker icon located in the Taskbar, and select "Adjust Audio Properties." Ensure that the "Mute" box under "Device Volume" is not checked and that the volume-slider is positioned to a level that is audible.

Click the "Audio" tab at the top of the window and ensure that the proper "Sound Playback" and "Sound Recording" devices are selected. Next, click "Volume" in the "Sound Recording" area of the window and ensure that "Mute All" is not checked and that the microphone is at an audible level. Close the top window and click OK.

Test the recording and playback volume by doing the following:

- Press RECORD (the red icon at the top) and say a few words into the microphone.
- Press STOP (the amber square icon) to discontinue recording.
- Press PLAY (the green arrow icon) to listen to the recording.

If you like what you hear, continue on to the next section. If not, experiment to adjust your sound properties settings.

Step 5: Ready Set, Go!

Finally, Audacity and LAME are ready for use. Start the Audacity program by double-clicking its shortcut on the desktop. Press RECORD and read from a prepared script that tells online customers where your business is located and how long you have been in business. Press STOP. During this test, users often like to use the built-in microphone on their computer, but production for a finished MP3 file depends upon a dedicated headset microphone for quality.

As you are speaking during this initial test, you will see sound waves — measurements of your own voice being recorded. If you see a flat line, nothing is being recorded, so press STOP, then EDIT, UNDO RECORD, then RECORD to start over.

After you have recorded this test podcast, click PLAY and you will hear your first podcast recording in its AUP uncompressed format.

The Final Export to the MP3 Compressed Podcast Format

Now, just for fun, step through the process of exporting the AUP production file (meaning converting and compressing it to a smaller size file) into an MP3 file format.

A major purpose of this export and compression process is to decrease the file size. In Audacity, three file extensions are possible — AUP, WAV or MP3. The largest file size is the production mode of AUP,

and the smallest is MP3. If you remember the many times you have abandoned a website that took too long to download because of large file sizes, then you know why you always want to compress the finished podcast to an MP3 format before posting it online.

To export the AUP file, click FILE in the Menu area and select the EXPORT AS MP3 option. Navigate to the preferred storage location, type in a name for the file and SAVE.

Read the box and click YES to help Audacity locate the “lame_enc.dll” file location. Then, navigate to the location where you stored the file — the location you wrote down earlier.

Select the “lame_enc.dll” file and click OPEN. Type names in the title and artist prompts, then click OK. Your AUP file just became an MP3 podcast!

The last task in Audacity 101 is to save the podcast file containing all aspects of the sound clips into a master folder that might be labeled, for example, WEBSITE PODCASTS. This master folder is your personal reminder that while any files still in your Audacity folder named PODCAST TEST are in production mode, the files in your WEBSITE PODCASTS folder are the finished products.

Go to FILE in the menu and select the SAVE PROJECT AS option. Navigate to the location where you want to store the now-MP3 file, type a name for the project, and SAVE. Congratulations, you now have completed your first professional podcast, and you did it with free software!

About the Authors:

Dr. Pat LeMay Burr teaches podcasting in the MBA program at University of the Incarnate Word, where she is building a volunteer group to help institutionalize the XO Laptop (One Laptop per Child Program) in developing nations.

Joseph Kirby completed his BBA in Information Systems at University of the Incarnate Word in May 2008, where he was named an HEB International Peace Scholar, served as president of several organizations, and wrote numerous columns for The Logos campus newspaper. See a complete online video tutorial about Audacity produced by Joseph.

Appendix 2: Podcast Submission Directories

Perhaps the most important place to submit a podcast is the iTunes Store. That process, especially the inclusion of the RSS feed elements needed for iTunes, was covered elsewhere in this manual. Once your RSS feed is completed, you should submit your podcast to as many podcast directory sites as possible. Having your podcast on iTunes or on the following directories exposes your podcast to a wide range of potential subscribers. Like a general online directory, sites submitted to these specialized podcast directories can be searched by topic or keyword.

Digital Podcast—<http://www.digitalpodcast.com/>

Yahoo! Podcasts—<http://podcasts.yahoo.com/>

Odeo—<http://www.odeo.com/>

Podcast Alley—<http://podcastalley.com/>

PodcastDirectory.com—<http://podcastdirectory.com/>

PodcastPickle.com—<http://www.podcastpickle.com>

podcast411—<http://www.podcast411.com>

PodcastBlaster—<http://www.podcastblaster.com>

Appendix 3: Basic Setup for Audio and Video Editing

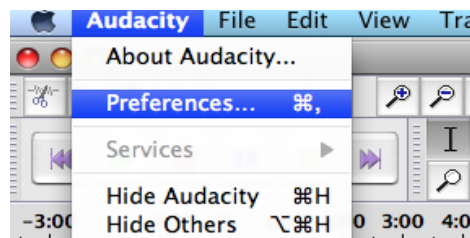
This example podcast production manual takes you through the process of setting up your audio and video editing software to produce either an audio only podcast or a video podcast. This example makes the following assumptions:

- You are using Audacity to capture and edit audio.
- You have already configured Audacity to export your audio to an MP3 file.
- Your podcast is designed to use the same audio track for either the audio or video version of a podcast episode.
- You are using iMovie for video editing

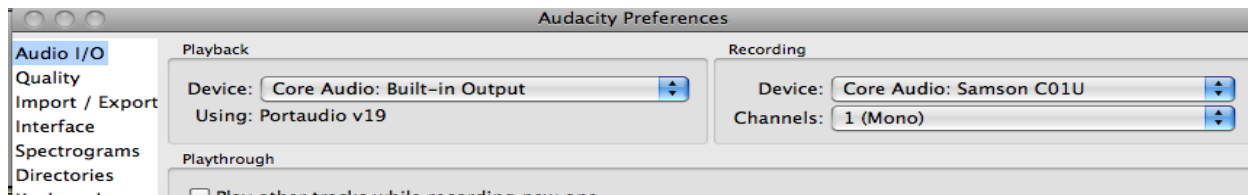
Initial Audacity Setup

The following assumes that you have already installed Audacity on a computer that is running either a Windows or Apple OS operating system, and that you have properly configured it to have the option of creating an MP3 output file (see Appendix 1). The following example was performed on an Audacity program on a MacBook running version 10.5.5.

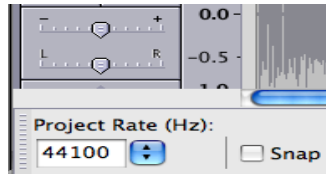
Step 1: From the **Audacity** tab in the toolbar, select the **Preferences...** option.



Step 2: Under the Audio I/O options, choose the appropriate Playback and Recording device Double check "Volume" option for both Playback and Recording

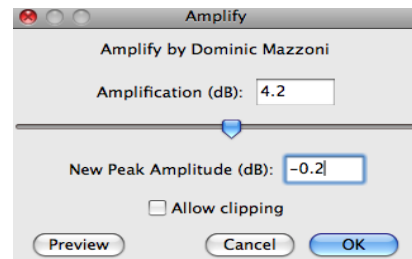
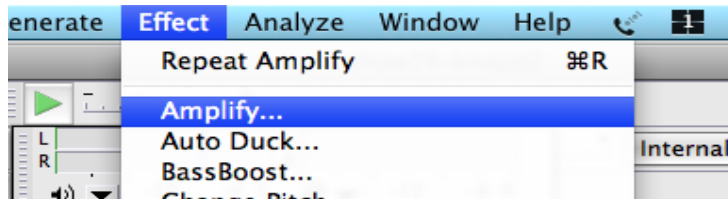


Step 3: In the lower left of the Audacity window, set the Project Rate to 44100 (while most voice recording can be done at a lower rate like 22050, I've had good experiences with 44100).

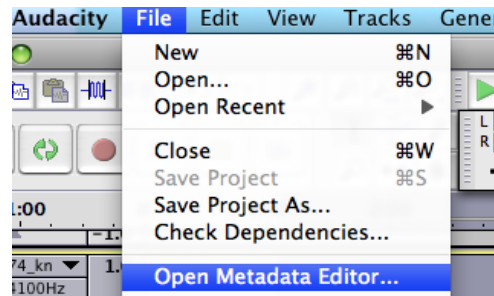


Post Recording and Editing Actions

Once you have completed recording editing, select the entire segment and choose the **Effect>Amplify** option from the toolbar to amplify the audio to a New Peak Amplitude of -0.2db



Another key task is to include information about the file within the file itself. This is done using the Metadata editor, which is in the toolbar at **File>Open Metadata Editor**.



Within the metadata editor option, be sure to fill out at least the following fields:

Artist Name: Either the creator of the show or the organization behind the show

Track Title: The name of the particular podcast episode

Album Title: The name of the Podcast Series

Track Number: The episode identification number

Year: Year of recording or of production

Genre: Podcast

Comments: Typically, this would include items such as the URL where additional information about the show or the series can be found.

An example from AirSafe.com is below:



Exporting to MP3

When you are exporting the file, use a file name that will make it easy to know what is in the show. Typically I use a two or three word title that explains it at first glance. For example:

show7-governor-interview.mp3

episode1-podcast-overview.mp3

lecture-math-fractions.mp3

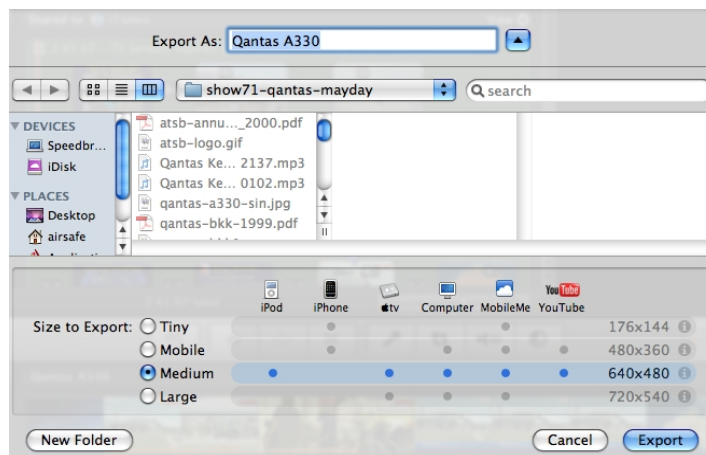
For a variety of reasons, you should keep the description to four words or less, and use hyphens to separate the words.

Creating the Video Podcast

This manual assumes that any video podcast will use the same audio track as the audio-only version of that episode. It also assumes that you are using a MacBook that includes iMovie, iPhoto, Audacity, and Garageband. AirSafe.com primarily uses iMovie for video editing, with audio inputs from an MP3 file (such as those created from Audacity or GarageBand), and visual inputs from photos (for example JPG or GIF photos managed through iPhoto), other graphic elements, or from video clips. Presentation programs like PowerPoint allows you to save slides in a graphics format link JPG or GIF.

For video editing, iMovie accepts many kinds of video, including video that includes an audio track. The program does allow some audio editing, but in the AirSafe.com podcasts, only the video portion imported video clips are used, and only the imported audio track from Audacity is used. Video clips can be created by your own camera, or found online, especially from a resource like YouTube. If you don't have a video clip in one of the formats supported by iMovie, you can easily convert a video file into an acceptable form like MP4 by using online conversion services like Media Converter at <http://mediaconverter.org>

Once the editing is complete, the file should be saved in a form that makes it viewable on iPods or on iTunes. In the iMovie toolbar, if you choose **Share>iTunes**, you can then save it using the Medium option for 'Size of Export' (see below).



Edit and Validate RSS File

Once you have completed the new podcast and uploaded it to the web, edit the RSS file according to the guidance given in Appendix 5. After you upload the RSS file, validate the feed using one of the online services that perform this task. Two of the ones used by AirSafe.com are Feed Validator at <http://feedvalidator.org>, and the W3C Feed Validation Service at <http://validator.w3.org/feed/>.

Market the Individual Episode

Now that the new episode and the RSS file that supports your feed are updated, it is time to tell the world that it is ready to view. Depending on what process you have designed, marketing could involve one or more of the techniques described in the case studies and in section 4, that may include a combination of web sites, blogs, regular or email newsletters, mailing lists, online or offline press releases, social networking sites like Facebook, or other online resources like Twitter.

Follow Up

Over time, the podcast should evolve in a positive way. To do that well, you should do several key things, including collecting feedback from your audience, and from those involved in the podcasting process. Another key is to find out which episodes get the most attention, either in the way of overall traffic or by the kind of feedback you receive. Based on your feedback, you should make changes, but unless there are serious technical issues with the quality of the audio or video, most of the changes during the first few episodes should focus on improving the behind the scenes aspects of the podcast such as episode planning, writing the script, and scheduling.

Appendix 4: Example Podcast Episode Script

The following was the script that I used for a podcast produced shortly after the crash of a airliner in Spain. The script served several purposes, with the most important being refining my message so that as much useful information about the event was presented efficiently. This written script became the basis of the supporting marketing materials, including the blog associated with the podcast, and the online press release created to support this episode. Note that at the end of the podcast is a call to action, in this case an invitation to visit a web page for additional information.

Welcome to the *Conversation at AirSafe.com*, with your host Dr. Todd Curtis.

This is show #62 - Crash of Spanair MD82 on 20 August 2008

The aircraft crashed shortly after takeoff on a scheduled domestic flight from Madrid to Las Palmas in the Canary Islands. Early reports indicated that the left engine experienced a major malfunction during the takeoff. The aircraft was able to get airborne, but the crew set the aircraft down in a area to the right of the departure runway. The aircraft broke up and there was a severe post-crash fire.

There were 162 passengers and 10 crew members on board, and 153 of the 172 occupants were killed. Among the passengers were 20 children and two infants. Both infants reportedly survived. Many of the 19 survivors suffered burns, some of them serious.

This was the first fatal event for Spanair, the second largest of the five airlines in the SAS group . At the end of June 2008, there were 65 aircraft in the Spanair fleet, averaging 13 years old. The fatal event aircraft was built in 1993.

This was the second fatal jet event for the SAS group, with the previous fatal event occurring on an SAS MD87 in Milan, Italy in 2001.

This was also a code share flight with Lufthansa, and that airline reported that seven of their passengers had transferred to the Spanair flight from a previous Lufthansa flight.

This was the 15th fatal event involving the MD80 series aircraft. Four fatal events have been in Europe, and four in the US. The aircraft began commercial operations in 1980, with the first fatal event in 1981. This latest crash was the eighth fatal MD80 event since 2000.

The Spanish Government is leading the investigation, with assistance from several US organizations, including the FAA, the NTSB, Boeing, and engine manufacturer Pratt & Whitney.

Additional information about this event, including updates or findings from the investigation, will be available at spanair.airsafe.org.

Thanks for listening, and I'll see you next time.

Appendix 5: Creating a Podcast Feed

If you have ever built a web page using HTML, or worked with someone to build a web page for you, then you will be able to develop an RSS feed for your podcast. RSS feeds are in fact have much less variation than web pages. Once you build your first, updating the page will be a lot less complicated.

I'll take you through the process of putting together a feed that will work with most feed readers, and will work with iTunes. The example is taken from the feed used by AirSafe.com for its *Conversation at AirSafe.com* podcast. The full feed is at the end of this appendix.

Detailed Description of a Podcast Feed

The podcast feed, which is an XML-formated file with the file name [filename].xml defines a podcast. It contains identification information about the podcast and its individual episodes, and it provides sufficient information to allow someone to subscribe to the podcast. When you make your first episode, you will create a feed that has the information about that first episode, as well as information about the overall podcast. When you make a new show, you only have to add or change a small part of the feed.

Step 1: XML Declaration

An RSS feed is in the XML format, and the first line in this example feed must includes an XML declaration. Also, the UTF-8 encoding is required for iTunes.

```
<?xml version="1.0" encoding="utf-8"?>
```

Step 2: RSS Declaration

This second line does several things, including defining this feed as following RSS version 2.0, and also satisfying Apple's requirements for a feed.

```
<rss xmlns:itunes="http://www.itunes.com/dtds/podcast-1.0.dtd" version="2.0"  
xmlns:atom="http://www.w3.org/2005/Atom" xmlns:media="http://search.yahoo.com/mrss/">
```

Note that there are other xmlns definitions dealing with Atom and Yahoo search. Atom and RSS are the two basic feed formats, and I included both to cover my bases. The Yahoo search portion of the tag helps the podcast feed get found within Yahoo.

Step 3: Channel Definition

Everything in an RSS feed resides between a <channel> and </channel> tags. Your podcast is defined in the first few lines after the first channel tag, so the next line opens the channel.

```
<channel>
```

Step 4: RSS Feed Information

The next several lines have information about the podcast, and the various tags do the following:

ttl: Tells feed readers how frequently to check the feed. In the AirSafe.com example, it is once every 60 minutes.

title: Podcast title

atom:link: provides a link to RSS feed URL for those readers using Atom title, URL, description: a description of the podcast

lastBuildDate: this tells feed readers when the feed was last updated.

language: The language of the podcast, in this case English

copyright: The copyright notice

webMaster: the contact email and name of the webmaster

managingEditor: the contact email and name of the managing editor

```
<ttl>60</ttl>
<title>AirSafe.com Podcast</title>
<link>http://www.airsafe.com/podcasts/castinfo.htm</link>
<atom:link href="http://www.airsafe.com/podcasts/rss.xml" rel="self" type="application/rss+xml" />
<description>Discussions of critical and timely issues related to aviation safety and aviation security.</description>
<lastBuildDate>Sat, 11 Oct 2008 16:00:00 GMT</lastBuildDate>
<language>en-us</language>
<copyright>Copyright © 2008 AirSafe.com, LLC, All Rights Reserved</copyright>
<webMaster>TheConversation@AirSafe.com (Dr. Todd Curtis)</webMaster>
<managingEditor>TheConversation@AirSafe.com (Dr. Todd Curtis)</managingEditor>
```

By the way, only the lastBuildDate should change when you update the feed. An update usually consists of the addition of a single episode (see “item” tags below), and when you do that, you have to update the date and time. My favorite date and time reference site is <http://www.timeanddate.com>.

Step 5: iTunes Specific Channel Tags

For iTunes, your feed should include the following tags that allow your podcast to work well within the iTunes software. Many of the tags are self-explanatory, but the category tags need a bit more explanation. Within the iTunes feed, you can specify the categories under which your podcast will be listed, which makes it easy for iTunes users to find podcasts using general search terms. For details on the categories that will fit your podcast, and for more information on all iTunes tags that can be used in a feed, visit the Apple web site at the following URL:

<http://www.apple.com/itunes/whatson/podcasts/specs.html#metadata>

```
<itunes:subtitle>An honest and objective look at the perception and reality of airline
safety</itunes:subtitle>
<itunes:summary>Conversations about critical and timely issues related to aviation safety, aviation
security, and the risk of airline travel.
</itunes:summary>
<itunes:category text="News & Politics" />
<itunes:category text="Society & Culture">
<itunes:category text="Places & Travel" />
  </itunes:category>
  <itunes:category text="Business">
  <itunes:category text="Business News" />
  </itunes:category>
<itunes:keywords>air, travel, risk, safety, airline, airport, terror, accident, crash
</itunes:keywords>
<itunes:owner>
<itunes:name>Dr. Todd Curtis</itunes:name>
<itunes:email>TheConversation@AirSafe.com</itunes:email>
</itunes:owner>
<itunes:explicit>no</itunes:explicit>
<itunes:image href="http://www.airsafe.com/pix/tsa_intl_flags.jpg"/>
```

Step 6: Include Information on Each Podcast Episode

Each individual podcast episode is an RSS item, and resides between the <item> and </item> tags. The following example is based on an item from the AirSafe.com feed. Note that you can put as many items in your feed as you like.

```
<item>
<title>Crash of Aeroflot-Nord 737-500 on 14 September 2008 (audio - MP3)</title>
<itunes:author>Dr. Todd Curtis</itunes:author>
<itunes:subtitle>Initial AirSafe.com report of the crash of an Aeroflot-Nord 737-500 near Perm,
Russia.</itunes:subtitle>
<itunes:summary>Dr. Todd Curtis discusses the fatal event involving an Aeroflot-Nord 737-500 near
Perm, Russia. There were 82 passengers and six crew on the aircraft. All 88 passengers and crew were
killed, including six children and one infant.</itunes:summary>
<link>http://www.airsafe.com/events/airlines/fsu.htm</link>
<description>Dr. Todd Curtis discusses the fatal event involving an Aeroflot-Nord 737-500 near Perm,
Russia. There were 82 passengers and six crew on the aircraft. All 88 passengers and crew were killed,
including six children and one infant</description>
<guid>http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3</guid>
<pubDate>Sun, 14 Sep 2008 21:00 GMT</pubDate>
<enclosure url="http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3" length="1370823"
type="audio/mpeg" />
```

```
<itunes:explicit>no</itunes:explicit>
<itunes:duration>1:54</itunes:duration>
<itunes:keywords>air, airline, safety, russia, perm, moscow, accident, former, soviet, union, fatal,
event, accident, airline, aeroflot, nord</itunes:keywords>
<author>TheConversation@AirSafe.com (Dr. Todd Curtis)</author>
<media:content url="http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3" fileSize="1370823"
type="audio/mpeg">
</media:content>
</item>
```

Step 7: Close Channel and RSS tags.

```
</channel>
</rss>
```

Step 9: Upload Your Feed

Once you have updated your feed, you should upload it, preferably to the same server (usually a web site directory) where your podcast episodes also reside.

Step 10: Validate your feed

In order to make sure that your feed will work and that you did not leave out any critical tags, you should validate your feed using one of the many free online feed validation services. My two favorites are:

Feed Validator: <http://feedvalidator.org/>

W3C Feed Validation Service: <http://validator.w3.org/feed/>

Full Podcast Feed Example from AirSafe.com

```
<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:itunes="http://www.itunes.com/dtds/podcast-1.0.dtd" version="2.0"
xmlns:atom="http://www.w3.org/2005/Atom" xmlns:media="http://search.yahoo.com/mrss/">
<channel>
<ttl>60</ttl>
<title>The Conversation at AirSafe.com Podcast</title>
<link>http://www.airsafe.com/podcasts/castinfo.htm</link>
<atom:link href="http://www.airsafe.com/podcasts/rss.xml" rel="self" type="application/rss+xml" />
<description>Discussions of critical and timely issues related to aviation safety and aviation security.</
description>
<lastBuildDate>Sat, 11 Oct 2008 16:00:00 GMT</lastBuildDate>
<language>en-us</language>
<copyright>Copyright © 2008 AirSafe.com, LLC, All Rights Reserved</copyright>
<webMaster>TheConversation@AirSafe.com (Dr. Todd Curtis)</webMaster>
```

```
<managingEditor>TheConversation@AirSafe.com (Dr. Todd Curtis)</managingEditor>
<itunes:subtitle>An honest and objective look at the perception and reality of airline
safety</itunes:subtitle>
<itunes:summary>Conversations about critical and timely issues related to aviation safety, aviation
security, and the risk of airline travel.
</itunes:summary>
<itunes:category text="News & Politics" />
<itunes:category text="Society & Culture">
<itunes:category text="Places & Travel" />
  </itunes:category>
  <itunes:category text="Business">
  <itunes:category text="Business News" />
  </itunes:category>
<itunes:keywords>air, travel, risk, safety, airline, airport, terror, accident, crash
</itunes:keywords>
<itunes:owner>
<itunes:name>Dr. Todd Curtis</itunes:name>
<itunes:email>TheConversation@AirSafe.com</itunes:email>
</itunes:owner>
<itunes:explicit>no</itunes:explicit>
<itunes:image href="http://www.airsafe.com/pix/tsa_intl_flags.jpg"/>
<item>
<title>Crash of Aeroflot-Nord 737-500 on 14 September 2008 (audio - MP3)</title>
<itunes:author>Dr. Todd Curtis</itunes:author>
<itunes:subtitle>Initial AirSafe.com report of the crash of an Aeroflot-Nord 737-500 near Perm,
Russia.</itunes:subtitle>
<itunes:summary>Dr. Todd Curtis discusses the fatal event involving an Aeroflot-Nord 737-500 near
Perm, Russia. There were 82 passengers and six crew on the aircraft. All 88 passengers and crew were
killed, including six children and one infant.</itunes:summary>
<link>http://www.airsafe.com/events/airlines/fsu.htm</link>
<description>Dr. Todd Curtis discusses the fatal event involving an Aeroflot-Nord 737-500 near Perm,
Russia. There were 82 passengers and six crew on the aircraft. All 88 passengers and crew were killed,
including six children and one infant</description>
<guid>http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3</guid>
<pubDate>Sun, 14 Sep 2008 21:00 GMT</pubDate>
<enclosure url="http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3" length="1370823"
type="audio/mpeg" />
<itunes:explicit>no</itunes:explicit>
<itunes:duration>1:54</itunes:duration>
<itunes:keywords>air, airline, safety, russia, perm, moscow, accident, former, soviet, union, fatal,
event, accident, airline, aeroflot, nord</itunes:keywords>
<author>TheConversation@AirSafe.com (Dr. Todd Curtis)</author>
<media:content url="http://www.airsafe.com/podcasts/show66-aeroflot-nord.mp3" fileSize="1370823"
type="audio/mpeg">
```

```
</media:content>  
</item>  
  </channel>  
</rss>
```

Resources

Apple FAQs for podcast creators: <http://www.apple.com/itunes/whatson/podcasts/creatorfaq.html>

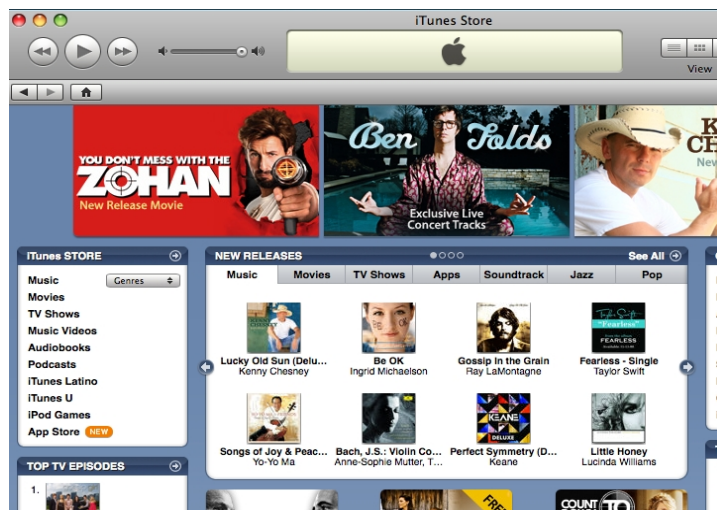
Apple Hints on Making a Podcast: <http://www.apple.com/itunes/whatson/podcasts/specs.html>

Submit a Podcast Page: <https://phobos.apple.com/WebObjects/MZFinance.woa/wa/publishPodcast>

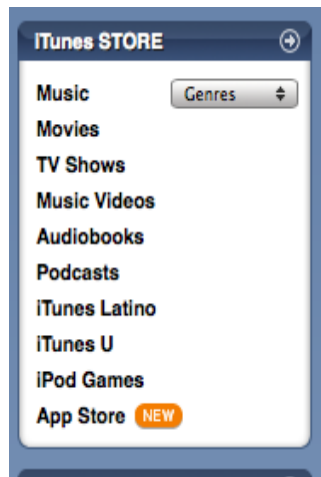
Note: Must be a registered iTunes user to submit a podcast, but it does not cost you anything.

Submission Steps:

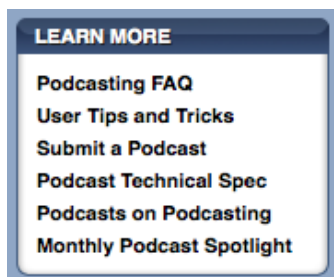
1. Start iTunes and go to iTunes Store.



2. Choose “Podcasts” in the iTunes STORE box:



3. In the bottom left, in the LEARN MORE box, choose “Submit a Podcast”



Appendix 6: Podcast Related Software

In This Appendix

- Web Browsers
 - Business and Office Software
 - Communications Software
 - Security-related Software
 - Media Software
 - Email Programs
 - Hard Drive Search Software
 - Geography Reference Software
-

Risks from Software

Any time that you add software to your computer, you want to avoid problems either with the software or with your computer, especially from viruses, spyware, and other malicious software. While it is possible that the free software that you download could have problems, you can avoid many potential issues by taking the following precautions:

- **Look for reviews of the software:** Two excellent resources for finding reviews of free software are Sourceforge.net at <http://sourceforge.net> and Download.com at <http://www.download.com>. You can also find comparisons with similar software and find out additional information such as how frequently a program has been updated or downloaded.
- **Trust your instincts:** If there is anything about a program or the maker of the program that arouse your suspicions, don't download the software.
- **Use trusted software makers:** Many free programs available online were created by established software companies or nonprofit organizations. Many of these software makers also provide updates, documentation, and technical support.

WARNING: If your computer is infected with spyware, adware, or other malicious software, it may direct you to somewhere other than the links listed below. If this happens, do not download any software, or take any other actions on that site. If you have an antivirus or antispyware program on your computer, use it to check your computer for malicious software. If you suspect that your computer is infected, you can also visit these sites using a computer that is not infected.

Web Browsers

Internet Explorer—

Included in Windows XP and Windows Vista

This browser is the most widely used; most web sites are compatible with it. For more information, visit the Internet Explorer site at <http://www.microsoft.com/windows/ie/>.

Firefox—<http://www.mozilla.com/firefox/>

This is the second most popular browser behind Internet Explorer. It is designed to aggressively block viruses, spyware, and popup ads. More features that can be added to the browser by using free downloads available on the Firefox site.

Safari—<http://www.apple.com/safari/download/>

This is the browser that comes with any Mac OS X computer, but versions are also available for Windows XP and Windows Vista.

Business and Office Software

Notepad—Included in Windows XP and Windows Vista

This text editor has no spell checker or other advanced features common to most word processing programs. This program can be accessed at **Start> All Programs> Accessories> Notepad**.

WordPad—Included in Windows XP and Windows Vista

This is a basic word processor that allows users to format text and graphics, but has no spell checker or other advanced word processing features. This program can be accessed at **Start>All Programs> Accessories> WordPad**.

OpenOffice.org—<http://www.openoffice.org>

This office application suite includes a word processor, database manager, and presentation manager. These programs can read, edit, and save files from a number of similar programs, including equivalent Microsoft Office programs such as Word, PowerPoint, and Excel.

NeoOffice.org—<http://www.neooffice.org>

This is essentially the OpenOffice application suite designed to run on the Mac OS X operating system.

Adobe Reader—<http://www.adobe.com/downloads/>

This software can be used to view, print, and search PDF files. Many of the supplemental documents associated with this book are available in PDF format at <http://forms.speedbrake.com>.

Communications Software

Skype—<http://www.skype.com>

This software is primarily designed for voice communication, but it also allows text-based instant messaging as well as a video connection with other Skype users.

Audio Hijack Pro—<http://www.rogueamoeba.com/audiohijackpro/>

This software, which is available only for the Mac OS X, can record audio through any program on the users computer, as well as directly using a microphone. Recordings can be saved in several formats, including MP3 and AAC. Unlike most of the software in this resouce section, this one will cost you money.

Pamela Call Recorder—<http://www.pamcoder.com>

This program allows you to record up to 15 minutes of a Skype conversation. Available for Windows XP and Windows Vista.

Windows Live Messenger—<http://get.live.com/messenger/overview/>

This successor to MSN Messenger allows multiple types of communication, including instant messaging, sending and receiving files, as well as voice and video chat. Also, users of Windows Live Messenger communicate with Yahoo! Instant Messenger users.

AOL Instant Messenger—<http://www.aim.com>

This IM program offers text based instant messaging as well as voice and video chat.

Yahoo! Instant Messenger—<http://messenger.yahoo.com>

This software allows text-based instant messaging, voice chat, and the ability to share files of up to one gigabyte with other users. Yahoo! Instant Messenger users can also communicate with users of Windows Live Messenger.

Media Software

iTunes—<http://www.apple.com/itunes/download/>

This media player and organizer allows you to play and manage video and audio files from several formats. It can also be used to download podcasts or to create audio CDs from material in your media collection. This application also has parental control options.

Audacity—<http://audacity.sourceforge.net>

This audio recording and editing software package can be used to produce podcasts or to edit one or more sources of audio information. You can also export the finished files in different audio formats, including MP3.

GarageBand—Included in the iLife Suite of Programs in any Mac OS X Computer

This audio recording and editing program allows you to record audio from a variety of sources, including a variety of built-in sound effects and background music. Completed projects can be exported as an MP3 or AAC file.

iMovie—Included in the iLife Suite of Programs in any Mac OS X Computer

This video recording and editing program allows you to record video from a variety of sources, including video files in a variety of formats, a built-in camera, or a camera connected to the computer. Movie projects can also include MP3 files, including files created by GarageBand, as well as photos, graphics, and slides from presentation manager programs such as PowerPoint. Completed projects can be exported in formats suitable for iTunes, or for uploading to video sharing sites like YouTube.

iPhoto—Included in the iLife Suite of Programs in any Mac OS X Computer

This program organizes photos and other graphics on the user's hard drive. It also allows a user to perform a variety of edits and enhancements on a photo or graphic. These photos and graphics can also be accessed by other iMovie and other programs on the user's computer.

GarageBand—Included in the iLife Suite of Programs in any Mac OS X Computer

This audio recording and editing program allows you to record audio from a variety of sources, including a variety of built-in sound effects and background music. Completed projects can be exported as an MP3 or AAC file.

Picasa—<http://picasa.google.com>

This photo organizer program allows you to edit, manage, and share the pictures and other graphics files on your computer. It can automatically locate and organize all the graphics files on your hard drive, upload visual content from external media like a digital camera or a flash drive, or save your pictures on to a CD-ROM.

QuickTime Player—<http://www.apple.com/quicktime/download/>

This digital media player can handle the audio and video formats used for Apple personal computers.

Real Player—<http://www.real.com>

This digital media player can play audio and graphics files associated with both Apple personal computers and computers that use the Windows operating system. It can act as a CD or DVD player, organize media files, and create CDs from your audio files.

Windows Media Player—Included in Windows XP and Windows Vista

This digital media player is capable of playing several types of audio and video files, and displaying still images. You can also use this program to organize media files and create audio CDs.

Windows Movie Maker—Included in Windows XP and Windows Vista

This video editing program is included with Windows XP Service Pack 2. and with Windows Vista. The program accepts audio and video input from several formats, and the output can be played on the Windows Media Player.

Hard Drive Search Software

Google Desktop—<http://desktop.google.com>

This program allows you to perform searches your computer's hard drive in the same way that you do online searches with the Google search engine. It can find IM chats, image files, video files, audio files, spreadsheets, document files, PDF files, emails, and recently visited web pages. Unlike Google searches on the Web, no advertising appears with your search results.

Windows Desktop Search—<http://toolbar.live.com>

This search program from Microsoft allows you to find email messages, documents, and many other file types located on your hard drive.

Spotlight—Included in Mac OS X Operating System

This search program from Microsoft allows you to find email messages, documents, and many other file types located on your hard drive. You can also narrow searches by date created, date modified, file size, and other attributes.

Appendix 7: Online Podcast Resources

In This Appendix

- Internet Safety and Security
 - Online Parenting Resources
 - Search Engines and Directories
 - Copyright and Intellectual Property
 - Email Accounts
 - Social Networking Resources
 - Computer and Internet Resources
 - Dictionary and Thesaurus Resources
 - Book and Library Resources
 - Encyclopedias and General References
 - World Geography and Politics Resources
 - Financial Information Resources
 - News and Weather Resources
 - Homework and Study Resources
 - Writing and Literature Resources
 - Podcast Marketing Resources
 - Podcast Production Resources
 - Education and Research Resources
 - Audio and Video Podcast Support
 - Photo Sharing Resources
-

Search Engines and Directories

Ask.com—<http://www.ask.com>

This search engine allows users to pose search queries using questions as well as keywords and key phrases.

Open Directory Project—<http://www.dmoz.com>

Sites in this directory are screened by a team of volunteers. By selecting the *advanced* link on the home page, you can limit search results to material appropriate for children, teenagers, and mature teenagers.

Google—<http://www.google.com>

The most popular search engine on the Web, the site includes language translation and language specific searching. Users can change the level of filtering by selecting the *Preferences* link on the Google home page and choosing from three options: strict filtering of explicit text and images, moderate filtering of explicit images only, or no filtering at all.

Yahoo! Search—<http://search.yahoo.com>

This search engine allows users to filter search results. Users can set the level of filtering by selecting the *Advanced Search* link on the home page and then selecting the Yahoo! SafeSearch option that will filter out explicit, adult-oriented content from the search results.

Yahoo! Directory—<http://dir.yahoo.com>

This site has direct links to the major subject areas of the Yahoo! Directory, as well as a search function that allows you to search either the Web or the Yahoo! Directory. There are no links to filter controls on this home page, but if you set up a filtering option on the Yahoo! Search page, those settings will apply to the directory.

Live Search—<http://www.live.com>

The successor to MSN search, this is the search engine used by the MSN.com site. This search engine allows users to filter search results.

Search Engine Showdown—<http://searchengineshowdown.com>

This site has information about changes and innovations in search engine technology, as well as comparisons of the features of many of the most popular search engines.

Copyright and Intellectual Property

Creative Commons—<http://www.creativecommons.org>

Provides extensive resources that explain the concept of a Creative Commons License, how it differs from a traditional copyright, and how material with such a license may be used.

Electronic Frontier Foundation—<http://www EFF.org>

This nonprofit organization supports privacy, intellectual, fair use, and free speech rights on behalf of the online community.

Public Domain Music List—<http://www.pdinfo.com/list.htm>

A database of songs and musical works published before 1923 in the United States and that are now in the public domain.

Stanford University Library—<http://fairuse.stanford.edu>

This site has extensive resources on copyright issues, including the concepts of fair use of copyrighted material and material that is in the public domain.

Indiana University Copyright Management Center—<http://copyright.iupui.edu>

The site provides explanations of how to obtain permission to use copyrighted material, how to obtain copyright protection, and a checklist that helps to determine if a planned use of copyrighted material constitutes fair use.

United States Copyright Office—<http://www.copyright.gov>

Provides extensive information on copyright and fair use, and information on how to register a copyright.

United States Patent and Trademark Office—<http://www.uspto.gov>

Provides extensive information about trademarks and service marks, including instructions on how to register a trademark or service mark.

Email Accounts

About.com—<http://email.about.com>

Extensive information about various email options, as well as comparisons of various free email services.

Gmail—<http://www.gmail.com>

This service allows several gigabytes of storage. Messages can be forwarded to other accounts, and users can also download messages into an email program.

Windows Live Hotmail—<http://hotmail.msn.com>

Accounts on this Web-based email service from Microsoft have limited storage, but the limit increases once the account has been verified. Email and attachments of up to 10MB can be sent or received.

Yahoo! Mail—<http://mail.yahoo.com>

Mail can be sent and received online, and can also be forwarded to other accounts or download messages into an email program. Users can also retrieve mail from other accounts while within Yahoo! Mail.

Social Networking Resources

BlogSafety.com—<http://www.blogsafety.com>

The site has resources aimed at parents, teens, educators, advocates, and others who are interested in the impact of blogs, newsgroups, and other social aspects of the Web. Includes safe blogging tips for teens.

Parent's Guide to MySpace.com—<http://www.parentsguidetomyspace.com>

Provides detailed information on how parents can find their child's profile on MySpace.com, and how they can ensure their child does not place compromising information online and available to the general public.

Computer and Internet Resources

Acronym Finder—<http://www.acronymfinder.com>

A searchable database of hundreds of thousands of acronyms and abbreviations related to computers, telecommunications, technology, and the military.

Ask Bob Rankin—<http://www.askbobrankin.com>

Programmer and computer technology author Bob Rankin provides easy-to-understand technical advice for a number of Internet-related subjects such as online multimedia, security, privacy, and search engines.

AskLeo!—<http://ask-leo.com>

A resource with links to hundreds of questions and answers about personal computers, with many detailed answers related to using Outlook Express.

ComputerHope.com—<http://www.computerhope.com>

A collection of free services that allows any user to access a database of extensive computer-related information, including hardware and software support for a variety of systems.

Download.com—<http://www.download.com>

The site has a wide range of free software for download, including security-related software. The site also has extensive tutorials and other resources that explain how to use software and how to use the Internet.

Internet101.org—<http://www.internet101.org>

A guide that explains the basics of the Internet in plain English. It provides a short history plus background information on several topics, including email, chat, viruses, searching, online shopping, and newsgroups.

Learn the Net.com—<http://www.learnthenet.com>

The site provides a basic understanding of how to set up and use a personal computer and how use various online services.

NetLingo—<http://www.netlingo.com>

Contains definitions to thousands of computer- and Internet-related terms. Also has explanations for many of the acronyms and slang terms that are often used in email, instant messaging, and other online communications.

Sourceforge.net—<http://sourceforge.net>

This site has a wide range of free software for download, and is one of the largest online resources for open source projects. These are software projects run by volunteers who work together to develop new software.

Urban Dictionary—<http://www.urbandictionary.com>

A user-generated dictionary of slang English words and phrases. There are approximately one million definitions, some of which are not suitable for children.

Dictionary and Thesaurus Resources

Dictionary.com—<http://dictionary.reference.com>

A multiple source dictionary search service that returns results from other online dictionaries.

Merriam—Webster Online—<http://www.m-w.com>

Provides links to both an online dictionary and thesaurus. For many definitions, you can also listen to the pronunciation of the word.

One Look Dictionary Search—<http://www.onelook.com>

A search engine that allows searches on more than five million words from more than 900 online dictionaries.

Urban Dictionary—<http://www.urbandictionary.com>

A user-defined dictionary that includes slang and online terminology.

Webopedia—<http://www.webopedia.com>

An online dictionary and search engine for computer- and Internet-related terms.

Book and Library Resources

Answers.com—<http://www.answers.com>

This resource draws from reference works from traditional publishers and online reference sources.

Amazon.com—<http://www.amazon.com>

In addition to being an online bookstore, this site also has extensive information about books, including sample pages, reviews, and publisher information.

Bartleby.com—<http://www.bartleby.com>

A multiple reference site that has links to several sources for quotations, encyclopedias, and numerous books from the Harvard Classics series.

BUBL Information Service—<http://bubl.ac.uk>

This directory is hosted by Strathelide University in Scotland and uses the Dewey Decimal Classification system to catalog selected Internet resources. The directory covers all academic subject areas.

Federal Resources for Education Excellence—<http://www.free.ed.gov>

Site has links to more than 1,500 education resources created by numerous US federal agencies.

Google Book Search—<http://books.google.com>

This search engine allows a user to find books using the author's name, the book's title, or even by using words and phrases that may be in the book. Some books have their entire contents available online and others may only have limited content available. A user can also find links to local libraries that may have the book in their collections.

The Internet Public Library—<http://www.ipl.org>

This site from the University of Michigan School of Information provides library services to Internet users. Activities include finding, evaluating, and organizing information resources.

Library of Congress Online Catalog—<http://catalog.loc.gov>

This search engine allows a user to find books by author, title, subject, call number, or keyword. This site also has links to the Library's photographic and audio catalogs.

Library of Congress Ask a Librarian Service—<http://www.loc.gov/rr/askalib/>

This site shows users how to use email, regular mail, phone, or fax to ask questions of Library of Congress reference librarians.

Library of Congress Virtual Reference Shelf—<http://www.loc.gov/rr/askalib/virtualref.html>

A directory with links to dozens of different online reference sources in areas such as abbreviations, almanacs, quotations, statistics, music, and literature.

The Online Books Page—<http://onlinebooks.library.upenn.edu>

This resource from the University of Pennsylvania Library contains a searchable database of thousands of books that can be viewed for free online.

Project Gutenberg—<http://www.gutenberg.org>

This resource contains a searchable database of more than 20,000 books that can be downloaded for free.

Encyclopedias and General References

Encarta—<http://encarta.msn.com>

A free online version of the Microsoft reference software. Site also links to a dictionary, thesaurus, and atlas.

The Free Dictionary—<http://www.thefreedictionary.com>

A multiple reference site that allows searches on specialized dictionaries for finance, computing, medicine, and law, as well as searches in the online *Colombia Encyclopedia*.

HowStuffWorks—<http://www.howstuffworks.com>

A source of unbiased, and easy-to-understand explanations of how things work. Areas covered include technology, social behaviors, and consumer products. The site also has consumer opinions and exclusive access to independent expert ratings and reviews.

Infoplease—<http://www.infoplease.com>

Searchable almanac, dictionary, atlas, and encyclopedia.

Virtual Reference Collection—<http://libraries.mit.edu/help/virtualref.html>

This part of the MIT Libraries site provides links to almanacs, information on corporations, data on associations, and other reference resources.

Wikipedia—<http://www.wikipedia.org>

This online encyclopedia is maintained by volunteers and contains entries on topics found in encyclopedias, as well as on topics typically found in almanacs and news publications. Entries may be added or removed at any time by volunteers, and may contain material that parents could find objectionable or offensive.

World Geography and Politics Resources

Congressional Research Service (CRS) Reports—<http://www.fas.org/sgp/crs/>

This resource of the Federation of American Scientists provides a searchable database of publications from the Congressional Research Service. This congressional support agency does not make its publications directly available to the public online, but its collection provides access to many of the CRS reports that address national security, foreign policy, and related topics.

Google Maps—<http://maps.google.com>

This site provides detailed street maps for the area around a given address, can provide detailed travel directions, and can also show either satellite photos or satellite photos with an overlay of a street map.

Library of Congress Portals to the World—<http://www.loc.gov/rr/international/portals.html>

Contains selective links providing authoritative, in-depth information about the nations and other areas of the world. They are arranged by country or area with the links for each sorted into a wide range of broad categories.

Library of Congress Research Guides and Database—<http://www.loc.gov/rr/international/spguides.html>

Links to a number of specialized resources, including more than 100 online editions of the Country Study series. Each work in this series has a description and analysis of the historical setting and the social, economic, political, and national security systems and institutions of a country.

The National Geographic Society—<http://nationalgeographic.com>

This site has several geography resources, including an online atlas and printable maps. It also has information about the National Geographic Bee, an academic competition for fourth to eighth grade students.

Perry-Castañeda Library Map Collection—<http://www.lib.utexas.edu/maps/>

A collection of mostly public domain maps from the University of Texas Libraries. Includes historical and contemporary maps covering the entire world.

TopoZone—<http://www.topozone.com>

Online topographic maps covering the United States.

The World Factbook—<https://www.cia.gov/cia/publications/factbook/>

This site is based on the reference book of the same name that is published by the US Central Intelligence Agency. The site has factual information on the political and social situations of the world's nations. Other information includes maps, natural resources, legal systems, political parties, and mortality rates. All information in the book or on the web site, except for the official seal of the CIA, is in the public domain.

WorldStatesmen.org—<http://www.worldstatesmen.org>

This site is a frequently updated encyclopedia of all the leaders of nations and territories. International organizations and recent religious leaders are listed separately. This site provides detailed chronologies, flags, national anthems, maps and indexes.

Chiefs of State of Foreign Governments—<https://www.cia.gov/cia/publications/chiefs/>

The Central Intelligence Agency publishes and updates the online directory of *Chiefs of State and Cabinet Members of Foreign Governments* weekly. The directory is intended to be used primarily as a reference aid and includes data on most of the governments of the world.

Writing and Literature Resources

The Columbia Guide to Online Style—<http://www.columbia.edu/cu/cup/cgos2006/basic.html>

An online guide for creating formal humanities style and scientific style citations for material taken from online sources such as web sites, blogs, audio files, video files, graphic files, email, databases, and other online content.

Dr. Grammar—<http://www.drgrammar.org/faqs/>

This resource from the University of Northern Iowa answers questions about the proper use of words, punctuation, and grammar.

Punctuation Made Simple—<http://lilt.ilstu.edu/golson/punctuation/>

This grammar resource from Illinois State University provides visitors with a general idea of how to use colons, semicolons, commas, dashes, and apostrophes.

Purdue University Online Writing Lab—<http://owl.english.purdue.edu/owl/>

This writing resource site has tutorials on grammar, sentence structure, English for non-native writers of English, creative writing, technical writing, and citation styles.

University of Wisconsin Writing Center—<http://www.wisc.edu/writing/Handbook/>

A concise resource on basic writing, including the stages of the writing process, advice on grammar and punctuation, and tips on improving writing style.

Podcast Marketing Resources

openPR—<http://www.openpr.org>

This site allows users to submit free online press releases that can be accessed through the company's web site, as well as through major search engines.

PRLog—<http://www.prlog.org>

This site allows users to submit free online press releases that can be accessed through the company's web site, as well as through major search engines.

iTunes Podcast Resources—<http://www.apple.com/itunes/whatson/podcasts/specs.html>

This page has numerous resource links that will guide podcasters through the process of submitting a podcast that can be searched for and subscribed to using iTunes. Specific instructions include what additional information has to be included in an RSS feed in order for Apple to accept the podcast for iTunes.

Podcast Production Resources

Animoto.com—<http://www.animoto.com>

Animoto produces a movie trailer type video using your photos. These photos can be either on your hard drive, or from an online photo sharing site like Flickr, Facebook, Picasa, or Photobucket, and have the Animoto turn it into a dynamic trailer. You can even add music to it (from your computer or from a music clip provided by Animoto.com). The free version allow you to create a roughly 30-second clip, which you can then upload from your Animoto account to your account on YouTube, Facebook, or to other social networking sites. By using another online service like Media Converter (see below), you can then turn that clip into another type of video file such as MP4 or WMV, and download that clip to incorporate into a video podcast episode.

AOL Video—<http://video.aol.com>

Thousands of videos are available for viewing, and registered users can upload videos. Only a portion of the videos on this site are free. Materials containing illegal, pornographic or harmful material are not allowed. A Family Filter option is also available.

Basement Ventures—<http://thebasementventures.com>

This free conference call service allows you to have an interview with one or more guests while having that conversation recorded. After the conference call, you can download an MP3 file of the recording for editing. While the services is free, you and your guests will have to dial into the long distance phone number to access the conference.

Blogger.com—<http://blogger.com>

Free blog hosting service that allows users to quickly create and customize a blog. While the service does not host podcast files, it does allow users to include embedded video players as well as links to audio and video podcast files.

FreshPodcasts.com—<http://www.freshpodcasts.com>

Links to recent podcasts, podcasting resources, and related software tools.

Google Video—<http://video.google.com>

A video sharing service, similar to YouTube, but with no time limits on the videos. It has similar age limits, with users having to be at least age 13. Also, no traffic data is provided by Google video.

Media Converter—<http://www.mediaconverter.org>

Online application that allows users to convert between several common graphics, audio, and video formats. The files can be located online or on a user's hard drive, and the user can download the result. This particular resource can also convert YouTube videos to formats such as WMV or MP4.

MusicUnited.org—<http://www.musicunited.org>

This coalition of music industry organizations and music artist organizations provides sources where a user can legally buy music online, as well as general guidelines on how to avoid violating the rights of copyright holders.

TubeMogul.com—<http://www.tubemogul.com>

Provides numerous free video analysis and distribution services for podcasters, including the ability simultaneously upload a video podcast to multiple online video services. It also provides tracking and analysis services including daily updates of the number of times a particular uploaded video is played.

Yahoo! Video—<http://video.yahoo.com>

Using Yahoo! Search, users can view videos that were uploaded to Yahoo!, or will be linked to videos elsewhere on the Web. Although adult materials are not allowed to be uploaded, you can link to adult content from outside of Yahoo! However, you have the option of setting up the video search feature to filter adult material.

YouTube—<http://youtube.com>

Millions of videos are available for viewing, and users can upload their own video creations as well. Users who upload videos can choose to either let the general public see the videos, or they can restrict access.

YouTube.com's policy states that children under the age of 13 are not allowed on the site, and children from 13 to 17 can visit only with their parents' permission.

Photo Sharing Resources

Flickr—<http://www.flickr.com>

This site allows you to upload photos from the Web, by email, from home computers, or from mobile devices. You must have a Yahoo! account to use the service.

Picasa Web Albums—<http://picasaweb.google.com>

This site, used in conjunction with the Picasa photo organizer listed in appendix 1, allows you to share photos online.

Photobucket—<http://www.photobucket.com>

This site allows storage for both photos and videos. It also allows you to make mashups and slideshows with both music and special effects. Allow you to link the result to your social media profile, blog, or web site.

Glossary

AAC—*Advanced Audio Coding*. An audio file format that is commonly used for music CDs, and songs purchased from Apple's iTunes store.

Acceptable Use—A set of rules or guidelines that limit how a resource such as Internet access may be used.

Aggregator—See *Feed Reader*.

Application—A computer program that is designed to do a particular task, such as browsing or games.

Attachment—A file that is sent as part of an email message. See also *Bcc*, *Body*, *Cc*, *From*, *Header*, *Subject*, and *To*.

Backup—A copy of data, software, or other information that is ideally stored in a place physically separate from the original information.

Bandwidth—A measure of the capacity of a communication channel, such as the rate that data can flow through an Internet connection, typically measured in bits per second. See also *Bit* and *Binary*.

Bcc—*Blind Carbon Copy*. This is one of the three address fields in the header of an email. This field is not visible to the recipient of an email. See also *Email*, *Header*, *Subject*, *From*, *To*, *Body*, *Attachment*, and *Cc*.

Blind Carbon Copy—See *Bcc*.

Blog—Short for Web log, this is a type of web site that features a series of regularly updated entries, usually displayed in reverse chronological order. These entries typically includes some combination of text, graphics, or multimedia files. See also *Social Networking*.

Blogger—1. A person who creates original content to a blog, including original articles and comments or other feedback on articles and other blog content. 2. A free online social networking resource that allows users to create and maintain blogs. See also *Social Networking*, and *WordPress*.

Blogging—The act of contributing to or maintaining a blog.

Body—The portion of an email that contains the message. See also *Header*, *Subject*, *From*, *To*, *Cc*, *Attachment*, and *Bcc*.

Bookmark—A web browser feature that allows a user to store the location of a web page or other online resource so that it can be quickly accessed later without typing the full address of the resource

Broadband—The term is commonly used to refer to Internet access via cable modems, DSL, and wireless technologies where the bandwidth is usually significantly higher than that of a dial-up connection. See also *Bandwidth*, *DSL*, *Dial-up*, and *Cable Modem*.

Browse—To follow links in a page to get from one resource to another on the Web.

Browser—A software program such as Internet Explorer or Firefox that allows a computer to interpret, display, or access information from the Internet. The information displayed is typically some combination of text, graphics, and sound. Also called a web browser. See also *Client*.

Burn—To write data to a compact disc. This term is usually used in the context of copying a music file or some other kind of audio file onto a compact disc. See also *Rip*.

Byte—A unit of measure of computer memory that is equal to eight binary digits or roughly one character of information. See also *Kilobyte*, *Megabyte*, and *Gigabyte*.

Call to Action—A request to take an action that will benefit both the person making the request and the person targeted with the request. For example, for a podcast a call to action may be a request at the end of a show to visit a web site for more information.

- Cable Modem**—A connection to the Internet using a cable connection that is separate from a telephone line. The cable may be dedicated for Internet access or it may carry other data such as television signals. See also *Dial-up*, and *DSL*.
- Carbon Copy**—See *Cc*.
- Cc**—*Carbon Copy*. This is one of the three address fields in the header of an email. Any recipient will be able to see any address listed in this field. See also *Email*, *Header*, *Subject*, *From*, *To*, *Body*, *Attachment*, and *Bcc*.
- CD-ROM**—*Compact Disc Read-Only Memory*. A computer storage medium for digitized information, including data and computer programs. See also *DVD*.
- Children's Online Privacy Protection Act**—See *COPPA*.
- Client**—A program on a computer or other device that requests services of information from a server. Servers are typically used to store or generate information that is requested by a client program. See also *Server*.
- Contact List**—The group of people who are allowed to have an online relationship with a user, and who can view that user's online status and online profile. See also *Buddy List*, *Social Networking*, *IM*, and *Chat Room*.
- Content**—The text, graphics, and other information that is contained in an email, web page, or file.
- Cookies**—A small text file that a web site's server places on a computer that allows a browser to retain specific information about a web site visit. Such information may include things like a user name, user preferences, or pages visited. When the user makes a return visit, the web site's server collects and uses information stored in that file. See also *Third-Party Cookies*.
- COPPA**—*Children's Online Privacy Protection Act*. A US federal law that sets restrictions on the online collection of personal information from children. To comply with the law, an online service provider may do things such as restrict children under the age of 13 from using the service or require verifiable consent from a parent or guardian of a child between the ages of 13 and 17 before letting that child use the service.
- Copyright**—A form of intellectual property protection that is provided by the laws of most countries. In general, it applies to most written and visual works. It is usually necessary to get the permission of a copyright holder before using a copyrighted work. See also *Fair Use*, *Intellectual Property*, and *Piracy*.
- Creative Commons License**—A form of intellectual property license that allows works to be created and used under that license that is somewhere between full copyright protection and public domain. See also *Public Domain* and *Copyright*.
- Cyberbullying**—Repeated or coordinated cruel or harassing actions directed at an individual by means of email, instant message, text message, blogs, web sites, or other Internet-related means.
- Cyberspace**—The nonphysical reality created by a computer or by a network of computers. The term is often used as a metaphor for describing the Internet.
- Defamation**—A false statement that causes harm to someone's reputation, or that causes that person to become a target of public contempt, hatred, ridicule, or condemnation. If the statement is spoken, it is referred to as slander, and if written or broadcast, as libel. See also *Libel* and *Slander*.
- Default**—The initial or basic settings of a software program or hardware device.
- Desktop**—A personal computer that is composed of several components including a keyboard, display device, and a separate unit that contains the data, software, and the electronics. This also refers to the icons and other graphics visible on a computer's display when no applications are running. See also *Laptop*.
- Dialog Box**—A small window that appears within a larger display that either presents information or requests input. See also *Toolbar*, *Menu Bar*, and *Pull-down Menu*.
- Dial-up**—An Internet connection that requires the exclusive use of a standard phone line. See also *DSL*, and,

Cable Modem.

Digital Rights Management—The practice of placing restrictions on an audio or video file, typically restricting copying and editing. Currently, much of the music and video content purchased online has these types of restrictions, although typically podcasts that are distributed for free have no such restrictions.

Digital Subscriber Line—See *DSL*.

Directory—Online, a directory is a service that organizes links to Internet resources by category or by some other criteria. In a personal computer, a directory is an index of the contents of the files in a part of the hard drive, containing information such as the name of a file, the size of a file, and the file’s creation date. See also *Folder*.

Display—A screen or similar device that is used in conjunction with a personal computer.

Domain Name—This is the unique combination of numbers and characters that helps to identify the location of web pages or other Web resources. For example, in the URL <http://www.airsafe.com>, the domain name is [airsafe.com](http://www.airsafe.com). See also *URL*.

Download—The transfer of data or files from one computer to another. See also *Download* and *Server*.

DRM—See *Digital Rights Management*.

DSL—*Digital Subscriber Line*. A technology for high-speed Internet access using standard phone lines that allows the line to be simultaneously used for Internet access and for making and receiving phone calls. DSL bandwidth is typically higher than the bandwidth of a dial-up connection and lower than that of a cable modem. See also *Dial-up*, *Cable Modem*, and *Broadband*.

Email—*Electronic Mail*. A generic term for messages composed and transmitted on a computer network. See also *Header*, *Subject*, *From*, *To*, *Cc*, and *Bcc*.

E-mail—See *Email*.

Extension—The group of letters in a file name that occur after the period and that identify the type of file. For example, in the file name “example.txt,” the extension “txt” indicates that the file is a plain text file.

FAQ—*Frequently Asked Questions*. A list of commonly asked questions about a subject.

Fair Use—The legal use of copyrighted material without the permission of the copyright holder. See also *Copyright* and *Piracy*.

Feed—A data format used to provide users or subscribers with frequently updated content. See also *Podcast*, *Feed Reader*, and *Aggregator*.

Feed Reader—Client software or web-based application that aggregates syndicated web content such as news headlines, blogs, and podcasts, in a single location for easy viewing. See also *Podcast* and *Feed*.

File—An organized collection of data that can be saved or retrieved by a computer. Typical file types include, audio files, graphics files, text files, and video files.

File Extension—See *Extension*.

File Name—The name of a computer file. Usually, such names include a file name extension that is specific to the format of the file. For example, “partylist.mp3” is an audio file, and “partylist.txt” is a plain text file.

File Transfer Protocol—See *FTP*.

Firefox—A browser developed by the Mozilla Foundation. This is open source software that is available as a free download. See also *Internet Explorer*, *Open Source*, *Download*, and *Browser*.

First Amendment—An amendment to the Constitution of the United States that among other things guarantees freedom of speech and freedom of the press. See also *Free Speech*.

- Folder**—An index of the contents of the files in a part of the hard drive, containing information such as the name of a file, the size of a file, and the file’s creation date. See also *Directory*.
- Forward**—To redirect or resend an incoming email to one or more recipients. Many email applications will add an abbreviation like “Fw:” or “Fwd:” to the beginning of the subject line to indicate that the email originated with someone other than the previous sender.
- Free Software**—Software that can be obtained and used without cost, can be used for any purpose, and that can also be copied and distributed without cost. See also *Open Source*.
- Free Speech**—The right to express opinions, information, or ideas in public or in private, regardless of content, without interference by a government. See also *First Amendment*.
- Freeware**—See *Free Software*.
- Frequently Asked Questions**—See *FAQ*.
- From**—The field in the header of an email that identifies the sender of an email message. See also *To, From, Cc, Body, Attachment, and Bcc*.
- FTP**—*File Transfer Protocol*. A network communication protocol for transferring files or data from one computer to another in a network. This is the protocol commonly used to upload files to a web site.
- GIF**—*Graphics Interchange Format*. This is one of the common formats for encoding photographs and other visual information. GIF encoded files have the “.gif” extension.
- Gigabyte**—A unit of measure, equivalent to 1024 megabytes, that is used to compare data storage capacity. See also *Byte, Kilobyte, and Megabyte*.
- Graphics**—Generic term for the visual content in a document or web page.
- Graphics Interchange Format**—See *GIF*.
- Harassment**—Words or actions that contribute to a hostile social environment and are directed at an individual or group based on characteristics such as gender, race, or age.
- Hard Drive**—A high-capacity data storage medium that contains the data and programs that are used by a computer. This device can be located within a computer or separate from the computer. See also *External Hard Drive*.
- Header**—The portion of an email that identifies the sender and recipients of the message, and sometimes other information such as the date and time the message was sent. See also *Email, Subject, From, To, Body, Attachment, and Bcc*.
- History**—A record of the web pages or other online resources that have been visited.
- Home Page**—The page on a web site that serves as the central focus or starting point for site visitors. Often, the address of the home page is the domain name preceded by “www.”
- Host**—A computer that is connected directly to the Internet rather than indirectly, such as through the computers of an ISP.
- HTML**—*HyperText Markup Language*. A computer language that is used to control how a browser displays a web page and how a web page is linked to other Web resources.
- HTTP**—*HyperText Transfer Protocol*. A protocol or set of rules used by servers and browsers for sending information across the Web. The characters “http://” that appear at the beginning of a URL refer to this protocol. See also *Server and Browser*.
- Hyperlink**—See *Link*.
- Hypertext**—Any document that contains one or more links to other documents. The links may be embedded within a word or phrase in the text, or within some other element such as a picture.

Hypertext Link—See *Link*.

HyperText Markup Language—See *HTML*.

HyperText Transfer Protocol—See *HTTP*.

Icon—A graphical representation of an item that when selected causes some kind of reaction or response such as starting a program or opening a file.

IM—*Instant Messaging* or *Instant Message*. An online service that allows near instant text-based communication among two or more individuals. Can also refer to the content of a message sent using this technology. See also *Chat Room*.

Inbox—The default destination for incoming email in most email programs.

Information—Any communication or reception of knowledge such as facts, data, or opinions that can be transmitted, accessed, or stored using some medium.

Information Superhighway—See *Cyberspace*.

Instant Message or Instant Messaging—See *IM*.

Intellectual Property—Products of human intellectual effort such as inventions, musical performances, or written works that may be protected or controlled through copyrights, trademarks, or through other means. See also *Copyright*, *Fair Use*, and *Piracy*.

Internet—A worldwide collection of computer networks that uses several protocols whereby computers and other devices can communicate with each other. Email, instant messaging, and the Web are three of the most widely used applications on the Internet. See also *Cyberspace*.

Internet Explorer—A browser designed to work with the Windows operating system. See also *Firefox*, *Windows*, *Open Source*, *Download*, and *Browser*.

Internet Service Provider—See *ISP*.

Intranet—A computer network inside an organization that uses the same kinds of software and communications protocols as the publicly accessible Internet, but which is not accessible by users outside of the organization. See also *Internet*.

IP—*Internet Protocol*. The standard protocol used by computer networks and other systems or devices to communicate within the Internet.

IP Address—The numeric address of a computer, server, or other device that is connected to the Internet.

iPod—A hard-drive- or flash-memory-based portable media player from Apple Computer. The device can play media in various audio and video formats, including AAC, MP3, MP4, and M4V. See also *iTunes* and *Podcast*.

iTunes—A software program from Apple Computer that can be used to manage media files on a user's hard drive. While iPod users must use iTunes in order to manage files on the iPod, the software can also be used independently of an iPod. In addition to managing medial files on a user's hard drive, it can also be used to download content both paid and free audio and video content from Apple's online store. Users can also use the software to search for and subscribe to podcasts that are registered with Apple. See also *iPod* and *Podcast*.

ISP—*Internet Service Provider*. An entity, usually a commercial enterprise, which provides access to the Internet, typically for a monthly fee.

JPEG—*Joint Pictures Expert Group*. This is a common format for encoding photographs and other graphics. JPEG encoded files have the “.jpg” extension.

Junk Email—See *Spam*.

- Key Phrase**—Several words, usually enclosed with quotation marks, that are used in a search engine to locate online resources. See *Keyword* and *Search Engine*.
- Key Site**—A web site that provides a level of information or a level of service that is better than most or all of the available alternatives.
- Keyword**—A word that is used within a search engine to locate resources online. Search engines can process one or more of these words at a time. See *Key Phrase* and *Search Engine*.
- Kilobyte**—A unit of measure, equal to 1024 bytes, used to compare data storage capacity. See also *Byte* and *Megabyte*.
- Laptop**—A portable personal computer that contains within a single package a keyboard, data storage medium, display screen, and all the other necessary components. See also *Desktop*.
- Libel**—A false statement, written or broadcast, and that causes harm to someone’s reputation, or that causes that person to become a target of public contempt, hatred, ridicule, or condemnation. See also *Defamation* and *Slander*.
- Link**—These are coded parts of a web page that when selected allow a browser to access some other resource on the Internet. A link may appear as highlighted, colored, or underlined text, or as part of another element of a web page, such as a picture or some other graphical element.
- Live Stream**—See *Stream*.
- Log Off**—To disconnect from the Internet, from some other computer network, from a computer, or from some kind of application or online service.
- Log On**—To use a combination of a user name and a password to connect to the Internet, to a computer, to an application, or to an online service. See also *User Name* and *Password*.
- Lurker**—A person who may visit a chat room to read what other people type, but who remains anonymous by not posting any messages.
- Mailing List**—A list of email addresses that is managed by an organization or an individual and that is used to send email to those on the list.
- Mashup**—Audio or visual work created by and editing together several pieces of audio or visual content from a single source or from two or more audio or visual sources.
- Media Converter**—Software or online applications that can convert a media file from one format to another. Typically, the conversion is from one audio format to another or one video format to another. Some may be able to take a video format, separating the video and audio tracks, and saving the output as an audio file.
- Media Player**—Software or hardware that is able to play one or more types of audio and video files. See also *iPod* and *iTunes*.
- Menu**—A list of items, options, or commands that can be selected by the user. See also *Menu Bar*, *Pull-down Menu*, and *Toolbar*.
- Menu Bar**—A row of menu titles, usually at or near the top of a window, that when selected commands the program to perform some action or function. See also *Pull-down Menu*, *Menu*, and *Toolbar*.
- Minor**—A child under the age of 18.
- Mouse**—This is a device that allows a user to position the cursor or to select icons or objects on the display.
- MP3**—*Moving Pictures Group Experts Layer 3*. This is a format for a type of audio file that is often used for music and podcasts. This kind of file has an “.mp3” file extension.
- MP4**—*Moving Pictures Group Experts Layer 4*. This is a video format commonly used for video podcasts and that can be played on iPods and iTunes. This kind of file has an “.mp4” file extension.

- M4V**—This very similar to the MP4 format, but it also allows producers the option of adding copying and editing restrictions. This kind of file has an “.m4v” file extension. See also *iPod, iTunes, and Media Player*.
- Microblogging**—A type of blog that allows very limited content. One example is the online resource Twitter, which allows up to 140 characters for each message. See *Blog*.
- Multimedia**—A file, web page, or other resource that contains more than one type of information, usually a combination of audio, graphic, or text information.
- Net**—See *Internet*.
- Network**—A group of two or more computers that are able to communicate with one another.
- Notebook**—See *Laptop*.
- Office Application Suite**—A group of programs used to create documents and perform functions appropriate for a business or academic environment. This group of programs typically includes a spreadsheet, word processor, and presentation manager. It may also include a database management program. See also *Spreadsheet, Database, Presentation Manager, and Word Processor*.
- Offline**—Used to describe information, resources, or activities that are not associated with accessing a computer network. Also used to describe the state of a system that has the capability to be online but that is not currently online.
- Online**—Used to describe the activities that involve accessing a computer network such as the Internet.
- Open Source**—Software or other intellectual property that is freely distributed and can be modified without restriction by users. See also *Intellectual Property*.
- Operating System**—The basic software of a computer that controls all other software in the computer and any devices that are connected to the computer.
- Opt-in**—A policy where a user explicitly agrees to allow a web site or some other service provider to collect, use, or share personal information.
- Opt out**—A policy where a user can explicitly request that a web site or some other provider of a service not collect, use, or share personal information.
- Outbox**—The temporary file that most email programs use for temporary storage of outgoing email before that email is sent to its intended destination.
- Outlook Express**—An email program that is included with the Internet Explorer browser of the Microsoft Corporation. See also *Browser, Client, Email, and Internet Explorer*.
- Overblocking**—A condition where an Internet filter denies access to content that a user is intended to be able to access. See also *Underblocking and Filter*.
- Password**—A combination of uppercase letters, lowercase letters, numbers, or other characters used to access a program, a computer, or a computer network.
- PDF**—*Portable Document Format*. This is a document format that can be viewed using a widely available and free PDF document reader. Documents created in a variety of other formats can be saved in this format.
- Peer-to-Peer Network**—A type of network where computers exchange files or communicate directly with each other, rather than through a central server. Often referred to as peer-to-peer, or P2P. See also *File Sharing*.
- Personal Information**—Data that can be used to identify or locate a person. Data includes, but is not limited to, user names, passwords, address, telephone number, job title, school, date of birth, and credit card numbers.
- Photo Organizer**—A type of software that is used to manage the graphics files on a computer.
- Photo Sharing**—An online social media resource that allows users to upload, organize, and share photos or other graphic information.

- Piracy**—Illegal or unauthorized copying, use, installation, or distribution of intellectual property such as software or music files. See also *Fair Use*, *Copyright*, and *Intellectual Property*.
- Podcast**—An audio or video file distributed using the Internet. This term also refers to the method of delivery. See also *XML*.
- Post**—A message entered into a newsgroup, blog, chat room, web site, or other online resource.
- Presentation Manager**—A type of software used to create, edit, and display presentations by using a combination of text, drawings, graphics, audio and other media. See also *Office Application Suite*.
- Privacy**—The ability to control the amount of access that others have to your personal information and the amount of control that others have over your online experience.
- Privacy Policy**—A written policy associated with a web site that explains how data from users may be collected and used. Such policies may allow the user to opt-in or opt out from activities of the site.
- Profile**—Personal information that a user provides to an online service. Depending on the online service, this information may be accessible to other users of that service and may consist of items such as name, screen name, address, personal interests, photos, or other personal details. See also *Buddy List*, *IM*, and *Social Networking*.
- Program**—See *Software* and *Application*.
- Public Domain**—Intellectual property that is no longer under copyright protection, has failed to meet the requirements for copyright protection, or that was intentionally provided to the public free of copyright restrictions. Works in the public domain may be used freely without the permission of the work’s creator or former copyright owner.
- Real Time**—Interaction between two or more users or systems that occurs without any apparent delays.
- Registered User**—A person who has to go through some kind of registration process in order to use a particular online service. See also *User*.
- Rip**—To copy data from a compact disc to either a personal computer hard drive or to some other storage media. This term is usually used in the context of copying a music file or other audio file from a compact disc. See also *Burn*.
- RSS**—*Really Simple Syndication*. A file format that allows users to subscribe to content the Web. This is the file format used for podcast feeds. Like a web page coded in HTML, an RSS formatted feed has a unique URL. See also *Feed*, *HTML*, *Podcast*, *URL*, and *XML*.
- Save**—A command used to update a file with any editing changes. In most programs, this overwrites the previous version of the file.
- Search**—The act of looking for online resources through the use of a search engine or directory. See also *Search Engine* and *Directory*.
- Search Box**—An input field for search engine commands.
- Search Engine**—An online service that allows a user to find online resources by using one or more keywords or key phrases. Most search engines present the results of a search as a list of web pages where the position on that list depends on how well that page’s contents match the search terms. See also *Directory*.
- Server**—A computer that responds to requests for services or for information made by other computers in a network.
- Service Mark**—A combination of one or more words, symbols, or designs that distinguish services provided by one party from those provided by others. See also *Copyright*, *Trademark*, and *Intellectual Property*.

- Signature Block**—The block of text at the end of the body of an email that typically has the sender’s name and contact information. See also *Signature File* and *Email*.
- Signature File**—A short text file containing the signature block information that is placed at the end of an email message. See also *Signature Block* and *Email*.
- Site**—See *Web Site*.
- Slander**—A false statement that is spoken and that causes harm to someone’s reputation, or that causes that person to become a target of public contempt, hatred, ridicule, or condemnation. See also *Defamation* and *Libel*.
- Social Bookmarking**—A social networking resource that allows users to organize, store, and manage bookmarks of web sites and other online content. These services typically allow users to make each bookmark either publicly available or to limit access. See also *Bookmark*, *Social Media*, and *Social Networking*.
- Social Media**—Online resources or or personal computer software, typically provided for free, that allow an organization or an individual to either create or consume online content. and that allow someone to shift easily between the role of audience and author. This is done using software, online applications, or other tools that allow someone without specialized knowledge about computers to create, publish, subscribe to, comment on, or share content for the benefit of groups or communities with shared interests.
- Social Networking**—Online services that encourage personal or group interaction by allowing users to easily publish and exchange information about themselves using online tools and applications such as email, instant messaging, chat rooms and blogs.
- Software**—A set of logical instructions that either controls the behavior of computers and other electronic devices, or that provides some specific kind of functionality.
- Spam**—Popular term for unsolicited commercial email, often associated with the promotion of a product or service of questionable value. The term may also be applied to email containing chain letters, fraudulent promotions, and other information that lacks authority, usefulness, or validity.
- Stream**—The process if playing online audio or video content on a computer in real time (live) rather than being first downloaded or saved into a user's hard drive. See also *Real Time*.
- Subject**—The field in the header of an email that contains a short description of the email’s contents. See also *To*, *From*, *Cc*, *Body*, and *Bcc*.
- Surf**—To search for information on the Internet without either a goal or a systematic process.
- Text Editor**—A simple word processing program that allows a user to create, edit, and print files containing only text characters, and that usually has very limited formatting options. See also *Word Processor*.
- Text Message**—A brief electronic message sent and received through a wireless network to or from a wireless device such as a cell phone or pager.
- To**—The field in the header of an email that identifies the recipients of an email. See also *Subject*, *From*, *Cc*, *Body*, *Attachment*, and *Bcc*.
- Third-Party Cookies**—Cookies that are generated from a web site other than the one that the user is visiting.
- Thumb Drive**—See *Flash Drive*.
- Toolbar**—A row of words or icons displayed by an active software application that when selected activates a function or performs some kind of action.
- Trademark**—A combination of one or more words, phrases, symbols, or designs that identifies and distinguishes the source of the goods of one party from those of others. See also *Service Mark*, *Copyright*, and *Intellectual Property*.

Uninstall—To remove a program from a computer.

Upload—The transfer of data or of one or more files from a user’s computer to a server or to some other computer. See also *Download* and *Server*.

URL—*Uniform Resource Locator*. This is an addressing system that uses a combination of characters and numbers to uniquely identify and locate each resource on the Web. For most web pages, the characters “http://” precede the address. Some browsers do not require a user to type the characters “http://” to recognize the address.

USB—*Universal Serial Bus*. This is common type of computer connection that allows different kinds of hardware to be connected to and communicate with a computer.

User—A person who is accessing an information system or network, either directly or indirectly. See also *Registered User*.

Username—See *User Name*.

User Name—The name used to access a particular application, software program, online application, or network.

User Profile—See *Profile*.

Video Sharing—The process of uploading, organizing, and distributing videos online, usually through web sites dedicated to this function.

Voice Over Internet Protocol—Also known as *VOIP* or *VoIP*, this is a protocol and associated technology that allows users to make and receive telephone calls by using an Internet connection.

VOIP—See *Voice Over Internet Protocol*.

Web—A portion of the Internet that allows users to access data and services using a browser.

Web Browser—See *Browser*.

Webcam—A camera that is connected to a computer and that can be used to send live images to a web site, chat room, or some other part of the Internet.

Web Log—See *Blog*.

Web Page—One page of a document on the Web. It is usually a file that is written in HTML and stored on a server. Typically, each page has links to other online resources. Each page on the Web has an address called a Uniform Resource Locator or URL. See also *HTML* and *Server*.

Web Site—A set of related web pages that share a common domain name. See also *Domain Name*.

Window—A rectangular space on a computer screen that is created by a browser or other software.

Windows—A class of operating system software created by the Microsoft Corporation. The majority of existing personal computers use some variation of Windows.

Windows Explorer—The file management program included with many versions of the Windows operating system.

WMV—*Windows Media Video*. This is a media format created by Microsoft. While it can be used for streaming audio or video content, it can also be downloaded for later feedback. All computers running the Windows operating system has the Windows Media Player software that can be used to play this type of file, This kind of file format can't be played on the iPod portable media player or the iTunes media player software. This kind of file has an “.wmv” file extension. See also *iPod*, *iTunes*, and *Media Player*.

WordPress—A free online social networking resource that allows users to create and maintain blogs. See also *Blogger*, and *Social Networking*.

Word Processor—Software that allows a user to create, edit, format, display, save, and print documents containing both text and graphics. See also *Office Application Suite*.

World Wide Web—See *Web*

Write—To create or edit, and then save data to some kind of storage medium, such as the hard drive of a personal computer.

WWW—See *Web*.

XML—*Extensible Markup Language*. This is computer language used to define RSS files used for subscribing to podcasts. See also *Feed, Podcast, and RSS*.

YouTube—Online social networking resource that allows users to upload and share videos, as well as allow other users to communicate privately with other users or to leave comments that can be viewed by other users. See also *Social Networking*.