5-6-2013

GO!Polo-discovering the "sport of kings"

Shelley Kornatz

Rochester Institute of Technology

A Thesis submitted to the Faculty of the College of Imaging Arts and Sciences,
in candidacy for the degree of Master of Fine Arts in Computer Graphics Design.

GO!Polo—Discovering the "Sport of Kings"

Shelley Kornatz
May 6, 2013

GO!Polo Thesis Committee

Chief Advisor:
Chris Jackson, Associate Professor, Computer Graphics Design

_____   _____
Signature of Chief Advisor   *Date*

Advisor:
Dan DeLuna, Associate Professor, Computer Graphics Design

_____   _____
Signature of Advisor   *Date*

Advisor:
Shaun Foster, Assistant Professor, Computer Graphics Design

_____   _____
Signature of Advisor   *Date*

Content Specialist:
Ted Torrey, Polo Coach at Glen Farm Equestrian Center in Portsmouth, RI

Thesis Candidate:
Shelley Kornatz

_____   _____
Signature of Thesis Candidate   *Date*

Table of Contents

1. Abstract

GO!Polo is an instructional application designed to help people interested in equestrian polo save time and money by allowing the user to review basic information about the sport on their own time before even getting on a horse. Thus, the user arrives to their first lesson with several lessons' worth of foundational knowledge, allowing them to focus on things that cannot be taught without being in the saddle—horsemanship and riding. This structure allows users to begin playing much more quickly than those without prior exposure to the application.

The Adobe Flash-based application strives to accomplish four main goals:

(1) Provide basic instruction on gameplay, rules, and strategy of arena polo

(2) Teach the user how to play safely

(3) Present this information in a dynamic and engaging format

(4) Allow the user to break into actual gameplay more quickly

While interactive teaching applications are nothing new, like the sport itself, GO!Polo aims to break out of the box of rigid traditions (in this case, visually) and present the information in an artistic and entertaining way; combining illustration, graphic design, animation, motion graphics, and coding into an engaging and practical teaching aid.

2. Introduction & Review of Literature

The PRACTICAL Problem:

Equestrian polo has the distinction of being called the "Sport of Kings," and for good reason. Conjuring up images of the rich and famous, it can be an intimidating activity to break into for those who don't fall into either of those categories. While finding a local club can be difficult, finding one that offers beginner lessons is next to impossible, as most clubs cater to collegiate teams or well-established athletes.

Should a person manage to find a suitable club, the price for lessons may come as a shock. It is not uncommon for polo instructors to charge upwards of $150 per hour, so every minute spent on a horse should be put to good use. Typically the first few lessons are spent teaching the rules of play and how to hit the ball, with minimal real game time. While the information covered in these first lessons is pivotal, much of it can be covered before a person even sits in a saddle. This is the niche that GO!Polo fills.

Every few months, the U.S. Naval War College (USNWC) Polo Club welcomes over twenty new members to their first arena polo lessons at Glen Farm Equestrian Center in Portsmouth, Rhode Island. In total, over 500 first-time players have joined the club in the past ten years, many of whom learned the basics of the sport from the author herself. While the majority of these new players are incoming students at the USNWC, their spouses and children (as well as staff and faculty at the college) are also able to join in.

Although the club tries to separate lesson groups based on skill, with the frequent influx of new people, growing size of the club, and each player's personal availability, a typical

lesson mixes players of varying experience levels. Those who are more advanced lose valuable playing time while the instructor goes over the basics and, although senior players are very accommodating to new members, going over the same introductory material time and time again becomes tedious.

While the club maintains a listing of polo-related resources new members can view for additional information, the content and presentation of the vast majority of these articles, websites, and videos present an entirely new problem for beginners.

The VISUAL Problem (REVIEW of LITERATURE):

Polo is a unique sport with rules and regulations that aren't found in any other athletic activities, which levels the field for those just starting to play—almost every new member in the USNWC club begins with zero knowledge of the intricacies of the game, so building a solid informational foundation is a must. One of the first websites people interested in polo will visit is the official site for the United States Polo Association (USPA). Although the USPA site has a wealth of information available, the two main sections a beginner would need to review most—"Learn How to Play" and "Rules"—are not as helpful as one would wish. "Learn How to Play" redirects to a page that merely recommends users find a local club and watch a match. "Rules" opens a PDF of the current year's official rulebook, which is unfortunately almost entirely text-based and contains vocabulary that people who have no prior experience with either polo or horses may have trouble understanding. It includes only three visual components, all of which are extremely confusing diagrams to the inexperienced eye.

Another popular page with problems similar to the USPA site is "THE RED BOOK of How to Play Polo." Although this website uses more beginner-friendly jargon, there are no photographs, illustrations, or diagrams whatsoever, which makes visualization of some topics difficult for those who have never critically watched polo being played.

Some instructional polo websites include photographs with their articles, but they are largely generic pictures of horses or players in the midst of a game and do not correspond visually to the topics nearby. The photographs that do correspond are often unable to effectively convey what the text is explaining; for example, the concept of the "line of the ball," a major part of polo, can be extremely confusing on paper, while photographs and static diagrams convey the idea only slightly better (this is also the main problem trying to learn from a book). Many of these sites are articles from large, popular databases such as "How to Play Polo" from *eHow.com* and *Wikipedia's* entry on "Polo," which generally pull their images from a large databank of tagged photographs. Even some of the more specialized pages such as "Learning to Play the Sport of Polo" by *Sportpolo.com* and "The Game" on *Polo101.com* don't include visuals that explain or enhance the concepts.

After reviewing the aforementioned websites and still having trouble understanding how polo works, a new player may then decide to look for instructional videos, hoping that the use of a more visual format will allow a better grasp of the concepts. Sarah Wiseman, Polo Manager at the All England Polo Club in Hickstead, UK, has created a series of instructional videos at *YouTube.com* under the username "HorsemartVideos" to give viewers a clearer idea of the sport than what is available elsewhere on the web. These videos are much more inviting than plain text on a website, with Wiseman herself

demonstrating to the viewer the four basic polo shots across a series of six, four-minute clips. Although the information provided is useful, the clips are long and much of the demonstration is done with a "foot mallet," a different, shorter mallet used for practice when not riding a horse. Several times footage of a shot from horseback is shown, but the process is slow and not on demand, forcing the user to scrub through the video timeline if they need to see a replay. Also, Wiseman does not attempt to cover actual elements of game play. Video recording is more helpful than photographs, but it cannot capture the essence of game play concepts correctly from a ground-level point of view such as that used in the HorsemartVideo series. An aerial view of the arena would be ideal, but due to the construction of polo arenas and the limitations of a camera's visual field it is not practical.

Another popular video that teaches the fundamentals of polo is also found on YouTube. "Polo | Rules of the Game," uploaded by user "horsetv" spends only a minute and a half of its six-minute duration reviewing core concepts such as the "line of the ball" and "right of way." While this film uses some animation to enhance and highlight aspects of these concepts (which would be otherwise impossible without heavily editing a recorded video), the animation is heavily cartoonish, employed mostly for the sake of showing things quickly and for comedic effect rather than for informational accuracy—the video never fully explains the concepts to an adequate extent.

However, even a video with generous gameplay footage, slow-motion replays, and informational graphic overlays similar to those used in American football falls short of being an optimal learning tool for beginners. The "Rules Guide" released on DVD by the Hurlingham Polo Association quite thoroughly examines the game of polo over the course

of thirty minutes. Unfortunately, the guide is strongly geared toward experienced polo players preparing to take the Umpire test and is not beginner-friendly. While it was filmed from a tall podium, giving a more advantageous view of the plays below than a video made on ground-level, the use of such a tall podium relegates the video to only showing field polo, which is played on a large grassy outdoor field and uses a different set of rules than arena polo. Additionally, the film is presented in a single, thirty-minute section, meaning the user cannot easily jump from one subject to another as they could on a segmented website or application.

The SOLUTION:

Ultimately, GO!Polo aims to solve the problems detailed above—both practical and visual—from all ends, creating an application that saves time and money while developing skills to make new players better and safer riders. While the application cannot replicate the experience of being on a horse, it takes full advantage of its interactive, digital format to convey as much information as can be taught without needing to be in the saddle. This information is presented in an effective, engaging, and beginner-friendly way, utilizing a variety of helpful interactions tailored to layman's descriptions of various introductory polo elements. Like a simulator used for flight training before actually getting into an airplane, GO!Polo is safer, cheaper, and allows the user to focus on learning without worrying about the consequences of attempting a potentially hazardous activity without adequate knowledge. The application reduces time spent reviewing basic topics, maximizes the ratio of playing time to practice fees, and overall increases time spent playing during lessons for everyone involved. Beginners arrive to

their first lesson more comfortable and confident, allowing them to jump right into

practice much more quickly and play alongside experienced players in a safe manner. The

usefulness of GO!Polo also allows beginning players to review—on their own time—what

they've learned in their early lessons.

3. Process

GO!Polo was developed as a two-dimensional interactive educational application, integrating motion graphics, animation, and illustration in a user-friendly UI developed with Adobe Photoshop, Illustrator, After Effects, and Flash with ActionScript 3.0. Ultimately intended to be accessible to a wide age range (from children to seniors), the core focus for user testing and preliminary release was ages 20 to 50. The application covers a wide range of basic polo topics, from what to wear in lessons and the four types of mallet swings, to how to defend against offensive maneuvers and regain control of the ball in a play.

Stage ONE:

Preliminary designs for GO!Polo included a layout similar to a website, with navigational elements organized across the header, and content (animations, illustrations, and text) below (fig. 1). Navigation was intended to be tab-based with breadcrumb orientation, allowing additional sections to be added in the future according to demand. Based on a verbal survey conducted with new and current USNWC Polo Club members, the six main categories ("Clothing,"
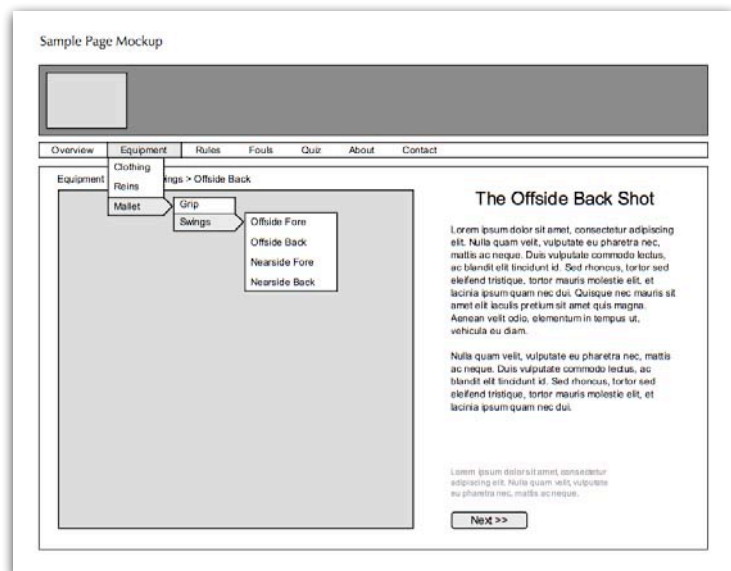

Figure 1. A page mockup of the initial GO!Polo design.

"Reins," "Mallet," "Game Overview," "Rules," and "Quiz") and ten sub-categories

(various offensive and defensive maneuvers, the four main mallet swings, and mallet grip)

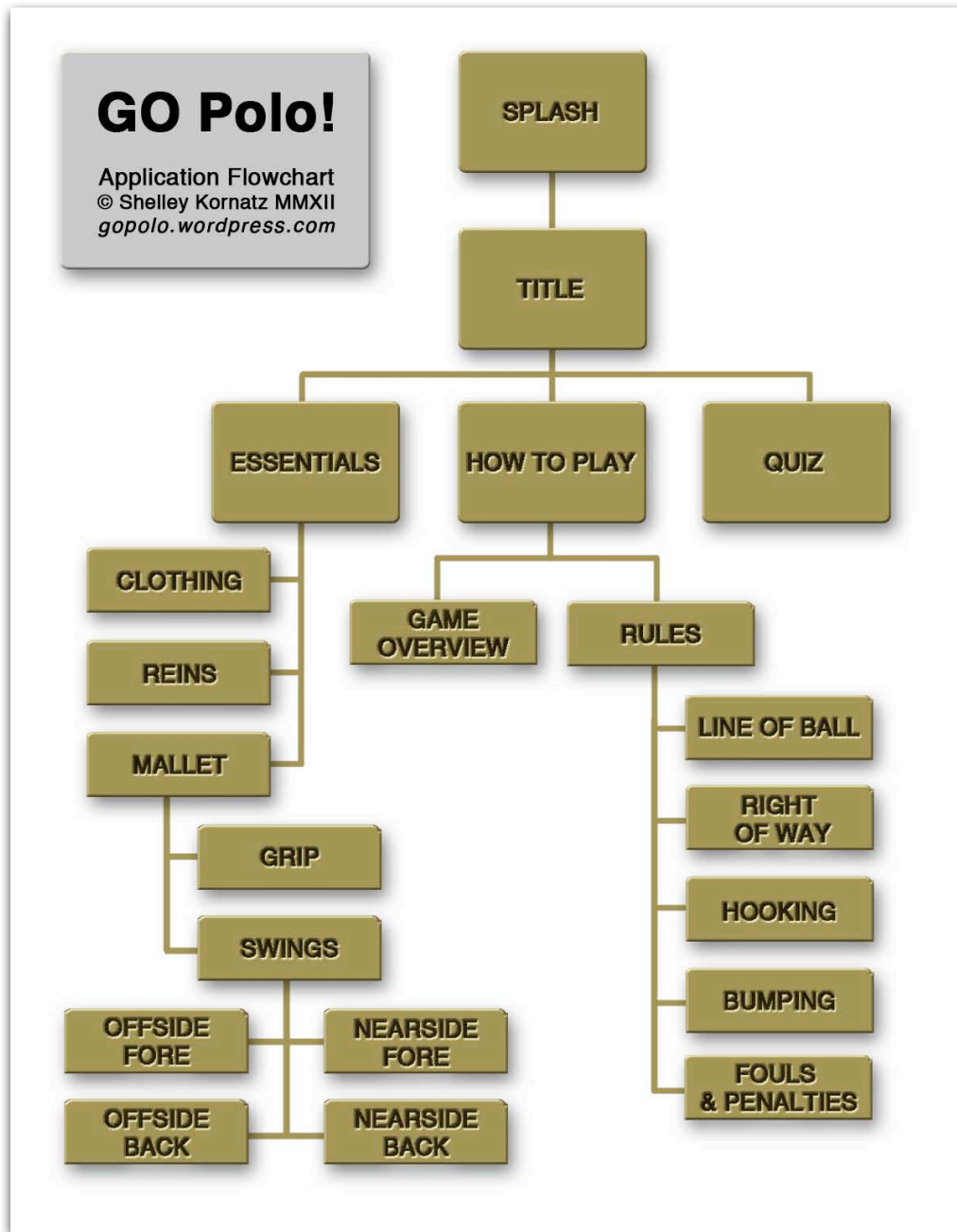of the application were conceived and a flowchart was developed (fig. 2).

Figure 2. The application flowchart, showing a hierarchy of all pages.

The color and textural palettes were developed to evoke horses and polo culture, creating visual metaphors of items one would encounter in a barn: leather tack, sand, straw, saddlepads, blankets, etc. Brown, blue, green, and white, along with metallic gold and silver, are commonly used on polo tack. The backgrounds of each page were intended to abstractly symbolize a textural element, such as leather grain to represent saddles, plywood to reflect arena walls, and thread stitching over patterned fabric as a "close-up" of saddle pads (fig. 3).

Figure 3. Initial color palette and textural designs, evoking polo culture and horse-related items.

Illustrations and animations were intended to be more realistic and not cartoonish. Any graphic elements used to describe the line of the ball or right of way were planned to use color distinction between the two teams as well as a color-coded ball to show which team has current possession. Typography was to be kept simple and clean, with legibility of primary concern. Due to the digital nature of the application, sans-serif fonts were targeted for body copy, with a larger serif typeface for headers to replicate engraved brass nametags used to personalize halters and saddles (fig. 4).

Figure 4. Various options for header typefaces.

Stage TWO:

After the initial design was laid out on paper, discussions with thesis committee members and target audience participants over the next several weeks guided the change of the application's layout from a website approach to a mobile device approach. For all incoming classes over the course of the 2012–2013 academic year, the USNWC began
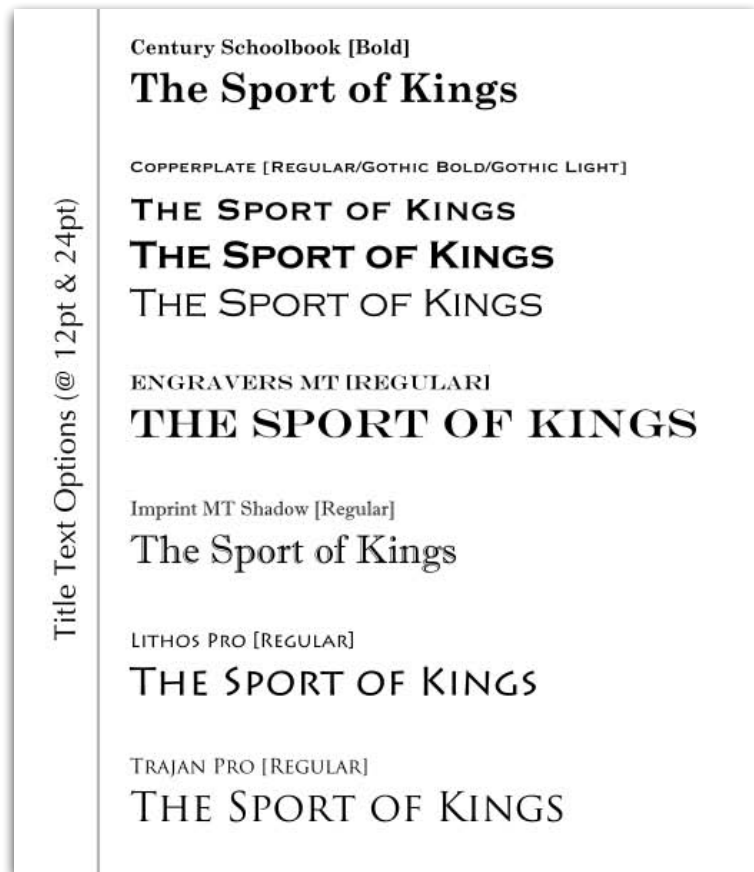
distributing coursework and textbooks to the students and faculty via iPad. As the target

user group of GO!Polo is USNWC students, it became clear that the application needed to

be able to transition from a web-based distribution to availability in the Apple "App Store"

in the future as well. The size of the application was changed to 1024px by 768px, the

current standard-definition ratio for iPads.

The layout changed from headers and tabbed navigation to larger buttons placed on

completely distinct screens for each section, which lead the viewer through the

application as opposed to having them choose which of the many sections they want to

view first (fig. 5). At this point, many attempts were made to find an aesthetically pleasing
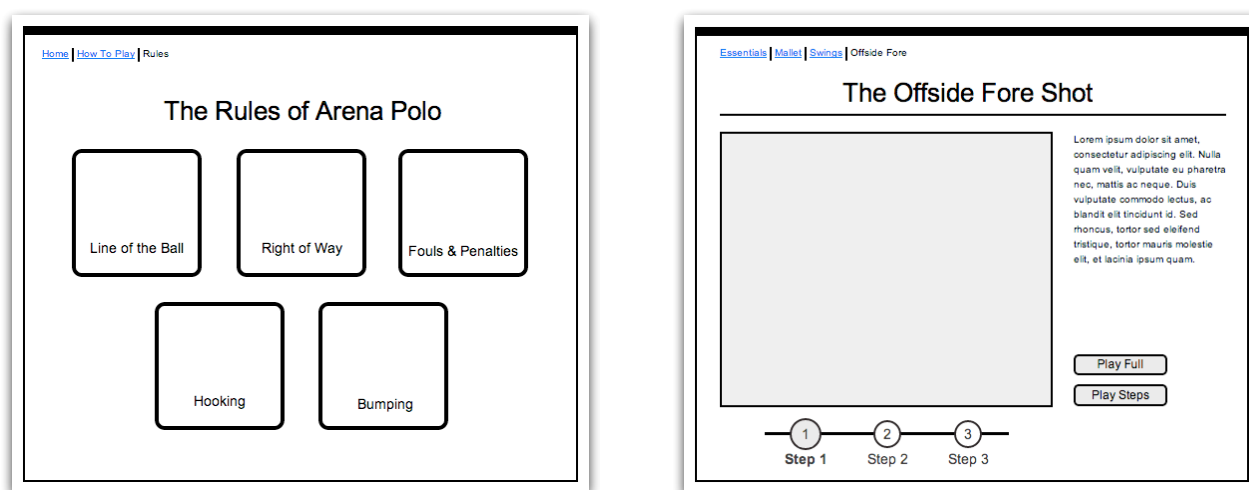

Figure 5. Two pages from a second version of the application, now aimed toward iPad mobile devices.

visual arrangement, but nothing particularly appealing—or that truly represents what polo

is as a sport—was developed (fig. 6).

Figure 6. Preliminary attempts to achieve a design using only textures.

Stage THREE:

After a decent amount of deliberation, the decision was made to take the application's previous style elements and make them much more realistic. The change was intended to immerse the player in polo culture: instead of using visual metaphors—a poor design choice as many of the application's users would not have enough exposure to horses or polo culture to understand what the metaphors were supposed to reflect—the illustrations would show actual objects that users would encounter in the barn during their lessons. Similarly, instead of displaying the objects in a neat and tidy manner, the new (and final) idea represented polo as accurately as possible. Polo culture is much more carefree and fun than one might expect of an equestrian sport, especially when much of the average person's horse knowledge comes from seeing uptight and rigid jumping or dressage competitions. Illustrations were used instead of photographs to demonstrate skill in digital painting, as well as to better blend objects together within a scene and have the opportunity to move and change items around if such edits were necessary (fig. 7). The color palette also evolved slightly to a more pleasing and cohesive set of colors (fig. 8). All illustrations were drawn in Adobe Photoshop.
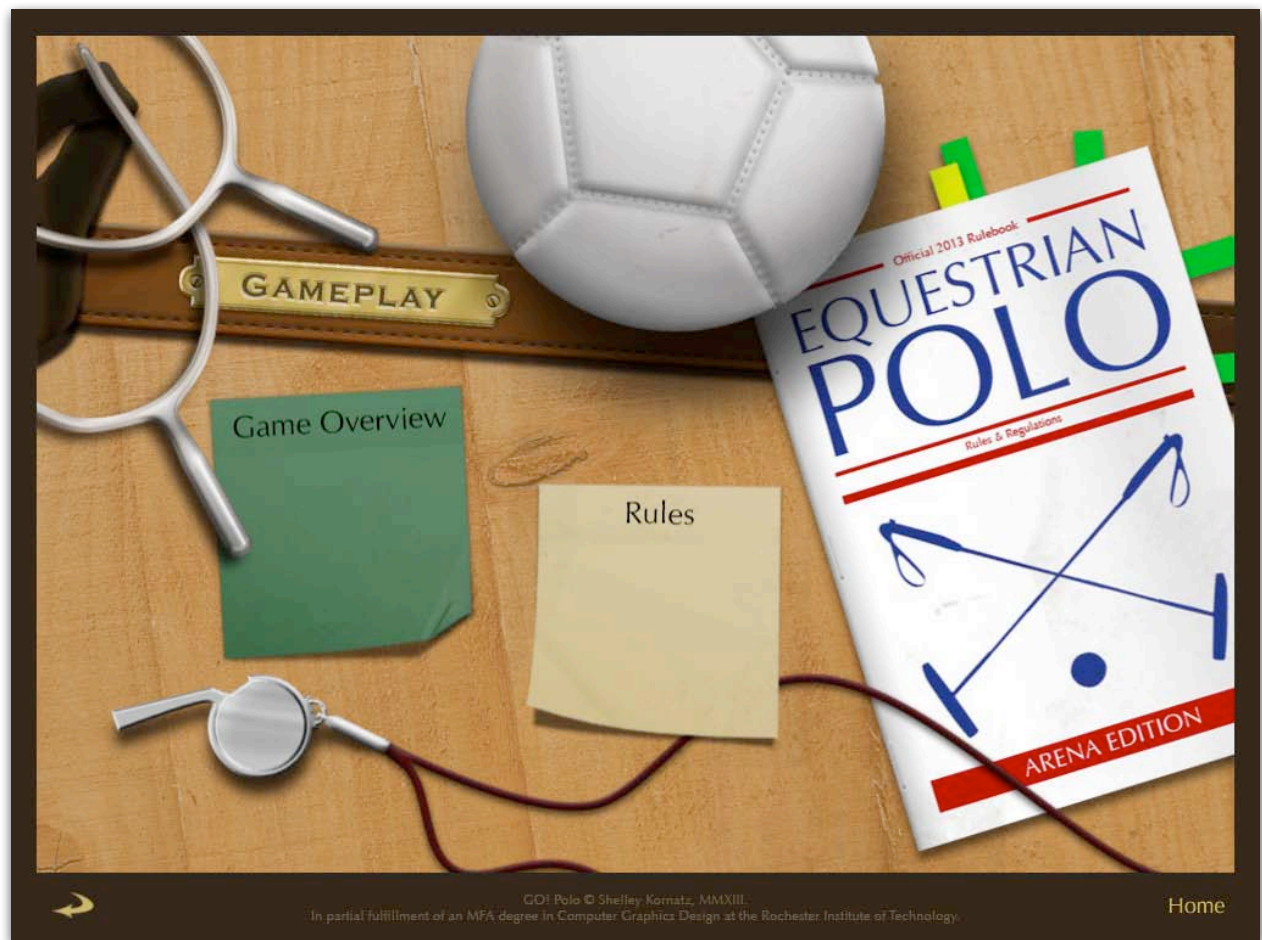
Figure 7. A sample of the final layout, using actual objects encountered at a polo barn.

Figure 8. A refreshed color palette uses similar hues but with a bit of added dust and grunge.

Stage FOUR:

Alongside development of the main illustrations, construction began on the application's

Flash framework. The program was built over a number of frames on the main timeline in

Flash (one for each "page" of the application), and movement through the application was

achieved using a main singular function added to each navigational element as a "click

event." The function determines which navigational button has been clicked and employs

a "gotoAndStop();" function to place the user at the appropriate frame on the timeline (fig.

9). With this program backbone in place, illustrations were easily inserted into the

application as they were completed, replacing placeholder graphics.

```
32   // function for wayfinding
33   function gotoSection(e:Event):void {
34       if (e.currentTarget == btnClothing) {
35           gotoAndStop("Clothing");
36       }
37       if (e.currentTarget == btnReins) {
38           gotoAndStop("Reins");
39       }
40       if (e.currentTarget == btnMallet || e.currentTarget == backZM) {
41           gotoAndStop("Mallet");
42       }
43       if (e.currentTarget == backZH || e.currentTarget == btnEnter || e.cu
44           gotoAndStop("Home");
45       }
46       if (e.currentTarget == btnBasics || e.currentTarget == backZB) {
47           gotoAndStop("Basics");
48       }
49       if (e.currentTarget == btnGameplay) {
50           gotoAndStop("Gameplay");
51       }
52       if (e.currentTarget == btnQuiz) {
53           gotoAndStop(1, "Scene 2");
54       }
55       if (e.currentTarget == btnGrip) {
56           gotoAndStop("Grip")
```

Figure 9. The central "wayfinding" function of the application uses a gotoAndStop(); method.

At this stage, certain elements such as button design and individual page layouts were finalized and implemented into the application. Initially, objects relating to each category of the program (e.g. a pair of jeans for "Clothing," a mallet for "Mallet," etc.) were intended to be used as buttons to navigate, but this idea was quickly scrapped as it became confusing to determine which objects were clickable and which were not. The design was slightly revamped, allowing a hierarchy to emerge from the scattered objects and better distinguish the clickable elements from background illustrations.

Pages with informational text and images now used an illustration that includes a large area covered by a book—the more general knowledge sections (under "Basics") use a spiral-bound book, while the sections concerning rules and maneuvers ("Gameplay") use a stapled rulebook pamphlet. The two types of books enable users to easily distinguish in which of the application's two main categories they are. The information within each section appears to be printed on the book's pages, so that each "page" of the application seems to open to a different page in a corresponding book (fig. 10). To continue the theme

Figure 10. General knowledge pages use one type of "book," while rules and regulations use another.

of studying from books, navigational buttons were changed to have the appearance of sticky notes, each with the name of its corresponding section written along the top (fig. 11).
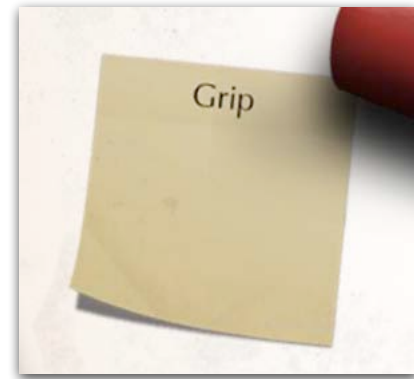
Figure 11. A detail of a "sticky note" navigational button.

Stage FIVE:

With both the basic navigation framework and background illustrations for each page complete, progress began on the actual informational elements. Using a combination of personal knowledge, guidance from the content specialist, and the 2012 *USPA Arena Rules* guide, each section of the application was filled out. A wide variety of visuals were used; from text with accompanying illustrations and step-by-step instructions (fig. 12), to animations. Animations were used for topics deemed hardest to understand—the four
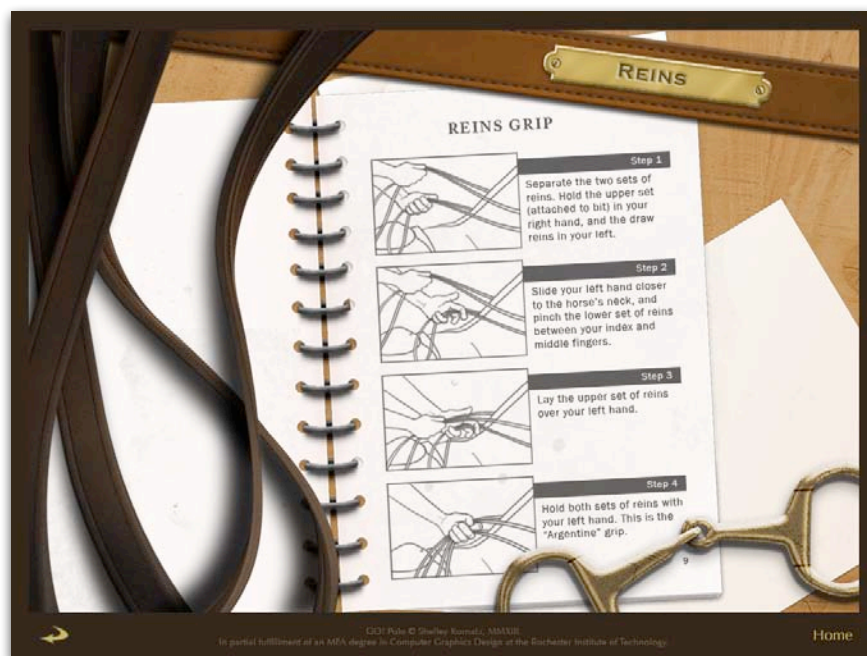
Figure 12. Step-by-step instructions show how to hold the horse's reins.

mallet swings, and the concepts of "right of way" (ROW) and "line of the ball" (LOB). The mallet swing animations were referenced from video footage taken during an actual polo lesson, and each frame of the four animations was drawn individually in Photoshop. The animations for ROW and LOB were developed in After Effects and exported as a PNG frame sequence.

The frame sequences for all animation elements were then brought into Flash. Each animation was put into a MovieClip, where it was broken down into two sections: a "full" animation that played without interruption, and a "stepped" animation that paused at key moments to relay additional tips pertinent to the action at that moment (fig. 13). Both viewing options were made available on each animation page, allowing the user either a brief overview or a more in-depth resource, depending on their need.

Figure 13. Users can step through an animation to get extra tips for a proper swing.

Although it does not contain any animations, the "Fouls and Penalties" section of the

application held the toughest programming puzzle (fig. 14). Even as a relatively minor
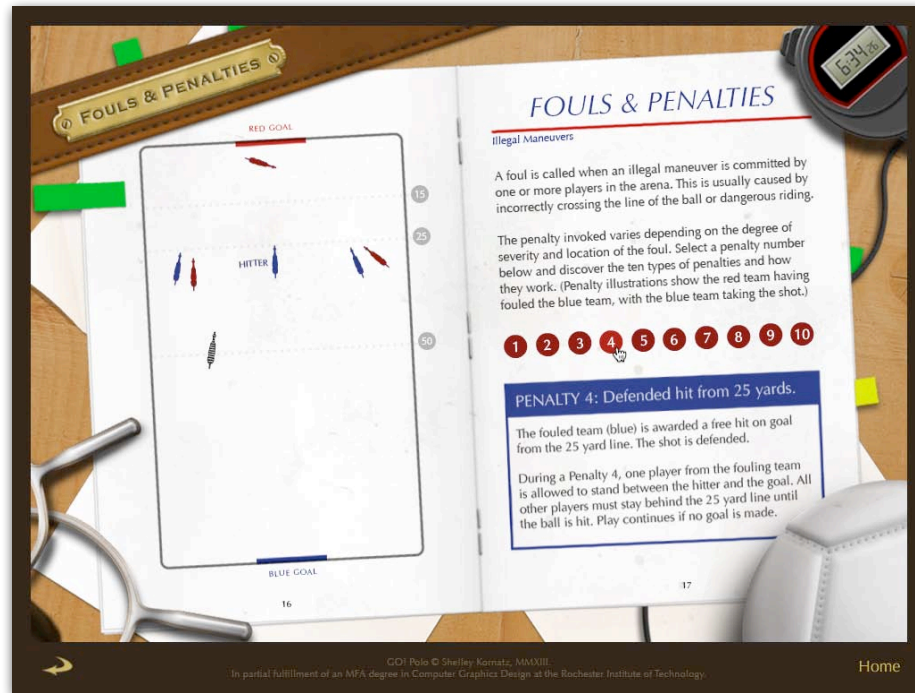
Figure 14. The rollover/click states of the red buttons on this page were not easy to code.

issue—and one that only matters for the web version of the application, as iPads lack the

hover state functionality of a mouse pointer—it was a challenge to solve. When clicked,

the chosen red button (corresponding to one of ten types of penalty shots) would change

to a lighter tint of red, alerting the user which numbered penalty was currently selected.

Simultaneously, a gotoAndStop(); function set the penalty visuals and information box

MovieClip to its corresponding internal frame. A highlighted rollover/rollout state was

added to the buttons as well, so that as a user moved their cursor over each button it

highlighted, then un-highlighted as the cursor left the button if the user did not actually

click it. This functionality worked well; the problem arose when a button was clicked and

then the mouse moved off the button, as the "rollout" function (which "turned off" the highlight) overrode the click function, removing the highlight even though the button was still technically "active."

After a lengthy period of trial-and-error, a temporary solution was found by manually removing the selected button's rollout function when the button was clicked. However, this in turn created another problem where the buttons stayed highlighted even when another was clicked. Ultimately, a solution was found with a Boolean variable and "for loop" that together determine which button was clicked and remove the highlight from any previously clicked button. Secondary functions control the highlight rollover/rollout states, changing the Boolean variable as necessary (fig. 15).

```
62   // for hover & click functionality:
63   // add with var isClicked, selectPen, & subHL_pen listeners
64   function selectPen (e:Event):void {
65       e.currentTarget.isClicked = true;
66       penalties.gotoAndStop(e.currentTarget.name)
67       for (var i:int = 1; i <= 10; i++) {
68           var prevPen = "pen0" + i;
69           if (this[prevPen] != e.currentTarget) {
70               this[prevPen].gotoAndStop("Normal");
71           }
72       }
73   }
74
75   function addHL_pen (e:Event):void {
76       e.currentTarget.isClicked = false;
77       e.currentTarget.gotoAndStop("Hover");
78   }
79
80   function subHL_pen (e:Event):void {
81       if (e.currentTarget.isClicked == true) {
82           e.currentTarget.gotoAndStop("Hover");
83       } else if (e.currentTarget.isClicked == false) {
84           e.currentTarget.gotoAndStop("Normal");
85       }
86   }
```

Figure 15. The eventual solution for the "Fouls & Penalties" buttons.

At this point, the last section ("Quiz") was completed. Originally conceived as a three-question quiz, six questions were developed instead, with each pertaining to a specific section of the application and dealing with things the user would likely encounter during their first lesson (e.g. proper reins grip, common foul and resulting penalty set-up, correct posture during a swing, etc.). Each question presents an illustration and two to five possible answers. Once an answer is chosen, the user learns whether they were correct or incorrect, with some additional clarification (fig. 16). A simple counter tracks which questions the user answered correctly, and presents the quiz score after all six questions are answered.
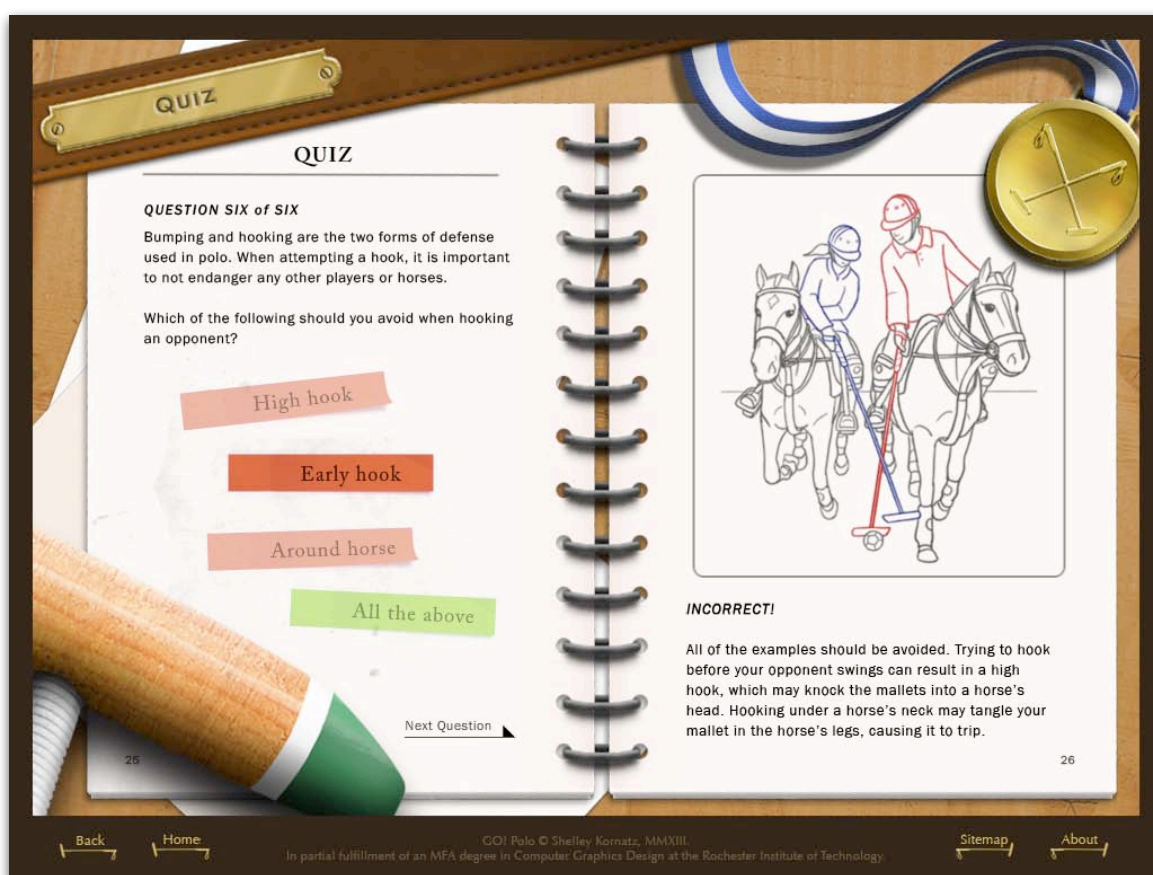

Figure 16. The "Quiz" page lets users know why a certain answer was right or wrong.

During the process of adding text to each page, it was noticed that the baseline of the text was oddly skewed, with some letters raised above—and others below—the baseline (fig. 17). Eventually the problem was found to be a quirk due to rotating the text to match
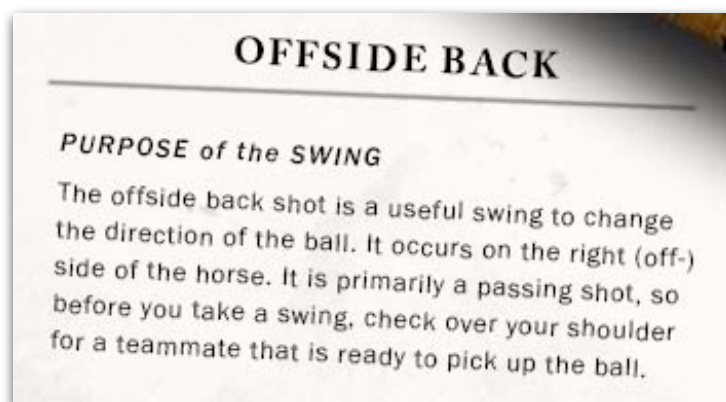
Figure 17. This bizarre baseline issue was resolved by rasterizing the text before rotating it.

the angle of the book illustration beneath. This was solved by typing the information within a perfectly horizontal text box (as opposed to rotating the text input area to match the book's angle below), rasterizing the type, then rotating it. The rasterization step removes any metadata regarding text baseline and turns the type into a graphic element, which allows rotation without skewing letters. Some sections of text were removed from the Photoshop files entirely and re-added within Flash, which also fixed the issue.

Stage SIX:

Finalization of the project relied heavily upon user feedback from thesis committee members, content experts, and an initial pool of 20 beta testers. The application was made available to the public through RIT's student web space, and a survey was developed and attached to the site via a pop-up window. A range of ten questions asked survey participants to rank the application on its overall helpfulness, amount of information presented, and the user interface, among other things (see Appendix B). Participants were also given the chance to offer additional feedback for many questions. Response to the

content and the application itself was overwhelmingly positive, but some tweaks to the interface were still needed.

Figure 18. A short description of each section is added to the sticky notes.

Having previously added small preview animations in place on the four "Mallet Swings" buttons, the rest of the square, sticky note buttons seemed empty. Although the application is fairly linear, first-time users tended to forget where sections were located. A small tagline of text was added to each sticky note, both to fill the empty space on the button and also as a navigational guide, with a brief description of what the user would find within each section (fig. 18).

With the amount of equipment polo players don for each lesson, it became clear that the simple text explanation on the "Clothing" page was not sufficient for users to learn what goes where and how to use each item. Thus, the page was changed to a drawing of a polo player wearing all the necessary gear; clicking on an article of clothing or piece of equipment highlights that object and displays a brief description about it (fig. 19). The added interactivity element and reduction of text displayed on screen provided a better visual experience.

One user commented that the mallet swing animations would be even more helpful if they showed a ball being hit instead of just an empty swing. This feature was added, and now not only helps show exactly when the mallet should make contact with the ball, but also

Figure 19. Selecting the player's kneepads brings up information about how they are used.

clarifies something many beginning polo players don't immediately realize: the ball is struck with the long, flat side of the mallet head, not the small ends (as in croquet).

Due to the Flash file being fairly large with the amount of illustrations used, the application tended to take several seconds to load before any graphics appeared on screen. To remedy this (and make sure users didn't lose interest or think the application was broken), the title page was moved to a different Scene within the same Flash file and converted to a loading screen, where a progress bar indicates how much of the actual application has loaded. At

100%, the progress bar is replaced by an "Enter" button, allowing users to start exploring

GO!Polo (fig. 20). The biggest changes to the application during these final stages were

Figure 20. When fully loaded, the progress bar turns into a button used to enter the application.

the addition of an informational "About" page and a fly-out navigation element. The

"About" page details information about the developer and why the application was

created, as well as contact information. The fly-out menu gives users access to a full site

map, allowing fast and easy navigation to any page within the application with a single

click (fig. 21). While the application framework leads users through section-by-section in a

logical order by following the sticky note buttons, the fly-out is primarily intended for
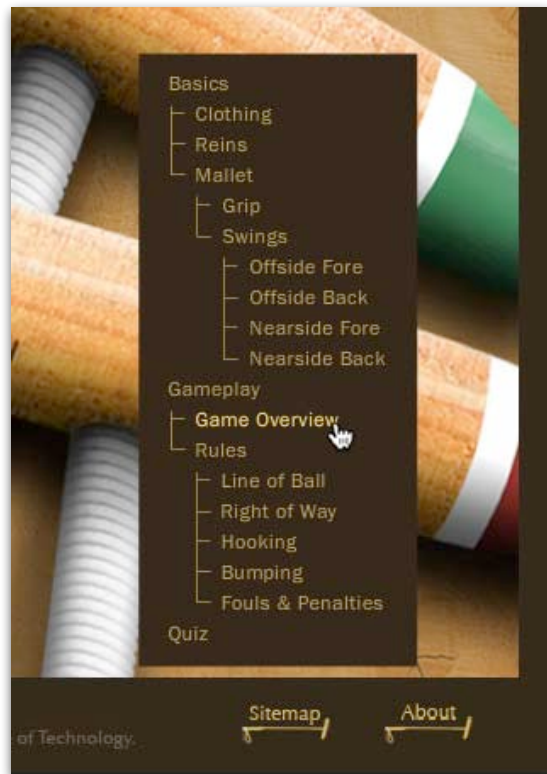
Figure 21. The animated flyout menu provides quick access to any part of the application.

returning users, who may need to review a specific section and find it quickly. The fly-out menu also helps orient the user within the application if they get lost.

With GO!Polo being developed for eventual transition to iPad, all button elements use a click function for activation ("clicks" translate to "finger taps" when converting the Flash file to iPad format via Adobe Air). However, the application will also be made available online for those who do not own an iPad, and rollover activation is much more intuitive for web content. Thus, the ActionScript contains both rollover and click functionality for most buttons—with the appropriate section "commented out" within the code—allowing easy conversion between the two types of navigation (fig. 22).

```
88   // for just hover functionality:
89   // remove var isClicked, remove above three functions & listeners
90   /*function addHL_pen (e:Event):void {
91       e.currentTarget.gotoAndStop("Hover");
92       penalties.gotoAndStop(e.currentTarget.name)
93       for (var i:int = 1; i <= 10; i++) {
94           var prevPen = "pen0" + i;
95           if (this[prevPen] != e.currentTarget) {
96               this[prevPen].gotoAndStop("Normal");
97           }
98       }
99   }*/
```

Figure 22. All buttons have click functionality for iPad conversion, but some buttons also have separate rollover/hover functionality for web display.

4. Summary

GO!Polo received enormous acclaim during user testing. Feedback from over 20 initial survey takers covered a wide range of users, from those with years of polo experience to those who were gearing up for their very first lesson. Garnering information from players with some experience allowed better conclusions concerning the usefulness of viewing the application prior to a lesson; those with several lessons under their belt were able to judge whether GO!Polo helped their comprehension of the sport having taken their first lessons without such an aid.

The initial survey participants were unanimous in concluding that the application would have been immensely helpful prior to their first lesson (fig. 23). One survey taker (with 1–2 lessons experience) remarked that they wished they could have used the application before their first lesson as a lot of the info given by the instructor went over their head—they were just trying to stay on the horse. The application also presented the opportunity for them to review the game on their own, taking time to understand each concept

This would be very valuable before starting to play.
4/16/2013 9:18 AM   View respondent's answers

Definitely would like to have had this before first lesson, I was lost and just trying to stay on the horse.
4/16/2013 9:09 AM   View respondent's answers

Would be great introduction for new players before first lesson
4/12/2013 9:24 AM   View respondent's answers

This would be awesome to have seen prior to first lesson
4/12/2013 8:48 AM   View respondent's answers

Yes

Figure 23. An excerpt of some survey feedback when asked if the application would have been helpful to view before going to a first lesson.

without being rushed. Another echoed similar sentiments, claiming that not only would it be helpful before starting lessons, it was a valuable memory aid.

Survey takers also praised the illustrations and animations, commenting that they grasped the concepts much more readily by experiencing them in a visual and interactive format (fig. 24). Of the survey results gathered from people with ample experience in polo, many also requested that a second application be developed for more advanced topics.
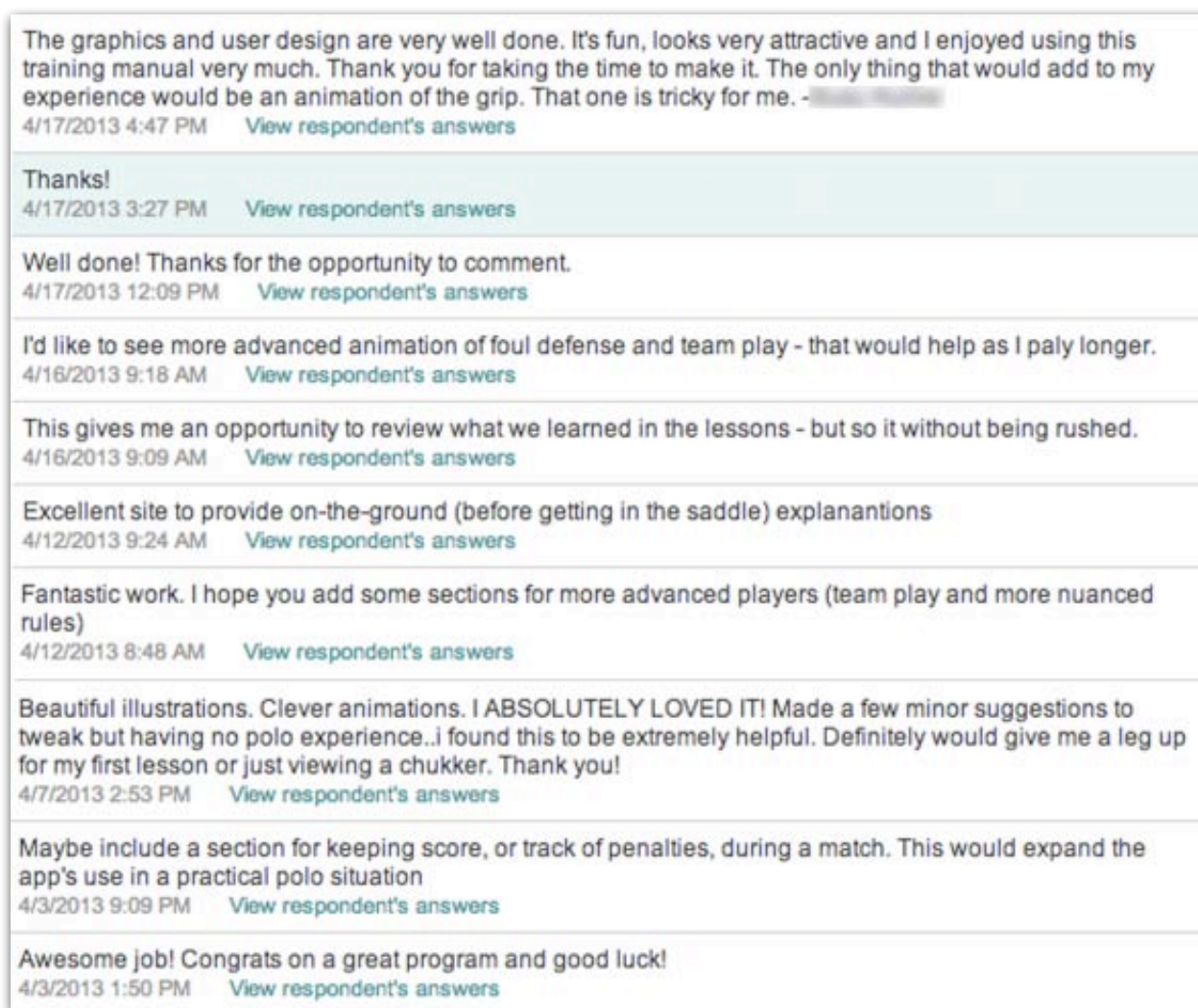

The graphics and user design are very well done. It's fun, looks very attractive and I enjoyed using this training manual very much. Thank you for taking the time to make it. The only thing that would add to my experience would be an animation of the grip. That one is tricky for me. -
4/17/2013 4:47 PM   View respondent's answers

Thanks!
4/17/2013 3:27 PM   View respondent's answers

Well done! Thanks for the opportunity to comment.
4/17/2013 12:09 PM   View respondent's answers

I'd like to see more advanced animation of foul defense and team play - that would help as I paly longer.
4/16/2013 9:18 AM   View respondent's answers

This gives me an opportunity to review what we learned in the lessons - but so it without being rushed.
4/16/2013 9:09 AM   View respondent's answers

Excellent site to provide on-the-ground (before getting in the saddle) explanantions
4/12/2013 9:24 AM   View respondent's answers

Fantastic work. I hope you add some sections for more advanced players (team play and more nuanced rules)
4/12/2013 8:48 AM   View respondent's answers

Beautiful illustrations. Clever animations. I ABSOLUTELY LOVED IT! Made a few minor suggestions to tweak but having no polo experience..i found this to be extremely helpful. Definitely would give me a leg up for my first lesson or just viewing a chukker. Thank you!
4/7/2013 2:53 PM   View respondent's answers

Maybe include a section for keeping score, or track of penalties, during a match. This would expand the app's use in a practical polo situation
4/3/2013 9:09 PM   View respondent's answers

Awesome job! Congrats on a great program and good luck!
4/3/2013 1:50 PM   View respondent's answers

Figure 24. An excerpt of survey feedback when asked for any additional comments.

A second, shortened feedback form with five questions was also distributed at "Imagine RIT," an annual innovation and creativity festival held in early May. GO!Polo was loaded onto a computer and users were able to explore the complete application and take the survey at their leisure. Although the majority of the 17 participants in this survey were not part of the intended audience (many were parents with small children and/or people with no initial interest in either the sport or horses in general), a final question asking users how prepared they felt for a lesson after viewing the application garnered a solid average of four on a scale of one to five, with one being "I don't feel prepared at all" and five being "I'm ready to play right now!" (fig. 25).

Figure 25. Excerpts of feedback from the survey given at Imagine RIT.

5. Conclusion

Based on virtually unanimous support for the application (36 of the 37 participants from both surveys agreed that they more readily learned the concepts through illustrations and animations; only one stated they preferred a less visual approach), a clear and significant need for an application of this type is demonstrated. It has been confirmed that players are able to grasp the sport more quickly, play more safely, and ultimately save their own time and money—as well as the time and money of other players—during lessons. GO!Polo will be added to the USNWC Polo Club's web portal in addition to being available for iPad download, as a valuable resource for new club members. In addition, the Head Umpire for the United States Polo Association has expressed interest in the application for possible usage on the USPA website and within clubs throughout the country.

Ultimately, GO!Polo is just a starting point. Research, questioning, and surveys conclude that based on the success of GO!Polo in its current, beginner-oriented form, there would be value in expanding the application to encompass all levels of experience. Additional developments could include more in-depth rules, umpiring, and advanced plays for arena polo, an entire second section for field polo, and even detailing how to ride a polo horse (preparing a horse for riding, the horse's equipment, walk/trot/canter/gallop, controlling the horse's direction by "neck reining," etc.).

While GO!Polo was intended to be a learning aid, it was also made to showcase a variety of personal talents in illustration, design, motion graphics, animation, and interactivity; thus the large amount of graphic elements. If this application continues to prove a

successful resource for new players, a second version could push the design into a streamlined user interface that focuses less on the artwork and more on information and interactivity. The interactive elements could also be taken a step further (fully utilizing the touch-based interface on mobile devices) and evolve into games where users "swipe" to move a polo ball around an arena, with illegal moves such as incorrectly crossing the Line of the Ball or impeding another player's Right of Way resulting in a foul being called. Games such as these can be explored using 3D integration with programs such as Autodesk Maya and Unreal Engine's Unreal Development Kit. Film could also be implemented, showing real-time gameplay where users must identify a variety of maneuvers and fouls from an actual video clip.

From a personal standpoint, this project offered a great deal of insight into the process of creating a full, functioning application from conception to final product. Using a combination of illustration, graphic design, animation, motion graphics, and coding explored a wide range of potential areas of focus after graduation. Similarly, not only are each of these skills important in their own right, but combining them delves into the world of interaction design—a booming field due to the ever-growing popularity of computers, tablets, and mobile devices.

Developing GO!Polo granted a greater appreciation for those just beginning to learn polo. It is a hard sport to pick up within a few lessons, as many new players shy away at the thought of having to learn not only the rules of the game, but also how to control a thousand-pound animal with a mind of its own underneath them. However, this application has so far proven successful at dismissing potential players' worries and will

hopefully draw more people into the sport (as the adage attributed to newspaper editor Arthur Brisbane says, "A picture is worth a thousand words." However, GO!Polo proves that animating that picture is worth a million!). Going back to basics to create this application also meant brushing up on the core rules and plays of the game, cementing this knowledge and improving myself—not only as a designer, but also as a polo player.

6. Appendices

Appendix A. Original Thesis Proposal

Appendix B. Survey (General)

Appendix C. Survey (Imagine RIT)

Appendix A. Original Thesis Proposal

Rochester Institute of Technology

A thesis proposal submitted to the Faculty of the College of Imaging Arts and Sciences in candidacy for the degree of Master of Fine Arts.

GO Polo! — Discover the Sport of Kings.
by Shelley Kornatz
November 7, 2012
Blog link: http://www.gopolo.wordpress.com

GO Polo!
Shelley Kornatz
November 7, 2012

Thesis Proposal Approvals

Committee Chair:
Chris Jackson, Associate Professor, Computer Graphics Design

OUT ON SABBATICAL— APPROVED VIA EMAIL (11/5/12)
_____
Signature of Committee Chair   Date

Committee Member:
Shaun Foster, Associate Professor, Computer Graphics Design

Shaun Foster   11/6/12
_____
Signature of Committee Member   Date

Committee Member:
Dan DeLuna, Associate Professor, Computer Graphics Design

Dan DeLuna   11/19/12
_____
Signature of Committee Member   Date

Content Specialist:
Ted Torrey, Polo Coach at Glen Farm Equestrian Center in Portsmouth, RI

Abstract

GO Polo! is an Adobe Flash-based interactive application aimed at people interested in trying polo. It is intended for use before the user starts polo lessons, which enables it to accomplish four main goals:

- Provide basic instruction on gameplay, rules, and strategy of arena polo
- Present this information in a dynamic and engaging format
- Teach users to play better and more safely while also saving time and money
- Allow the user to break into actual gameplay more quickly

The theme of *GO Polo!* is one that has yet to be explored in the format proposed—condensed, easily accessible and distributable, and interactive. All of these descriptors are essential in developing an application that will attract and educate people that are interested in picking up the sport.

Problem Statement

Polo's nickname is the "Sport of Kings." Conjuring up images of the rich and famous, it can be an intimidating sport to break into for those that belong to neither of those social groups. Finding a local club is difficult; finding one that offers beginner lessons is next to impossible, as most clubs are catered to collegiate teams or professional athletes.

Should a person manage to find a suitable club, the price of lessons may stun them. It is not uncommon for group lessons to reach upwards of $150 for an hour of instruction. Most instructors spend the first lesson (and sometimes more) teaching the rules of play and how to hit the ball. The information covered in these first lessons is pivotal, but much of it can be covered while not in the saddle. This is a niche that *GO Polo!* fills. The application teaches the user basic mechanics of the game and enables them to start playing right away once they do get in the saddle. *GO Polo!* saves all users both time and money—while the goal is to promote interest in the sport, it will benefit everyone whether they find themselves motivated by the application and want to start playing as quickly as possible, or if they have read through the material and decided playing polo isn't for them.

GO Polo! also allows for a unique visual perspective on the game. Most of the websites returned when a person searches "how to play polo" either lead to walls of explanatory text with no diagrams, illustrations, or photographs, or simply display a single sentence telling the site viewer to find a local polo club to learn. If there is visual material, it is usually generic photographs or a YouTube video filmed from the sidelines of a match. Neither is particularly helpful, as the core concept of polo, the "line of the ball," is

something that is hard to describe even when on a horse in the arena, let alone from the sideline view of a grainy video. What *GO Polo!* will offer is an overhead, birds-eye view of the arena, with animations clearly showing this line and how it changes when the ball is moved around the arena or two players interact—a display similar to the way television stations use a yellow line to mark a first down, or how a "world record line" is shown over the pool as swimmers compete in the Olympics.

This application has great potential to contribute to the field of computer graphics in two major ways. First, digital media is quickly accessed, easily editable, and frequently free, causing printed educational materials to decline in popularity as eBooks and online teaching materials become the norm. The growing fields of computer graphics and digital teaching materials unite in the creation of *GO Polo!* to create something that uses fresh, exciting graphics and animation to teach important concepts while also being readily available to anyone interested in picking up the sport. Second, most digital media is focused on the younger generation; *GO Polo!* caters to a broad range of ages and backgrounds, from teenagers who have shown horses for years to retirees looking for a fun hobby to keep themselves physically fit. This application not only unites this wide range of demographics with interest in the sport, but also keeps users in touch with the fast-paced fields of technology and computer graphics.

Survey of Literature

Claytor, Tom. "THE RED BOOK of How to Play Polo." *Argentina Polo*. 15 Sept. 2012.

"Polo 101." *United States Polo Association*. 6 Sept. 2012. &

USPA Arena Rules. United States Polo Association. 2012. 15 Sept. 2012.

The common theme across the instructional pages of most dedicated polo websites is that they are all almost entirely text-based. The official United States Polo Association (USPA) arena polo rulebook has only three visual components, all of which are extremely confusing linear diagrams to the inexperienced eye. Visuals such as these are of little help to a beginning player.

Bodine, Alicia. "How to Play Polo." *eHow*. 10 July 2008. 15 Sept. 2012.

"Learning to Play the Sport of Polo." *SPORTPOLO Corporation*. 7 Sept. 2012.

"Polo." *Wikipedia*. 10 Mar. 2012. 7 Sept. 2012. &

"The Game." *Polo 101 — An Insider's Guide to Polo*. 17 Sept. 2012.

Some polo sites include photographs with their articles, but they are largely generic pictures of horses or players in the midst of a game. The photographs that do correspond to the subject are largely unable to effectively convey what the text is explaining. The concept of the "line of the ball," a major part of the game, can be extremely confusing on paper, while photographs and static diagrams convey the idea only slightly better. This is also the main problem trying to learn from a book.

HorsemartVideos. "How to Play Polo - An Introduction." *YouTube.com*. **21 Apr. 2010. 15 Sept. 2012.**

Sarah Wiseman, Polo Manager at the All England Polo Club in Hickstead, UK, has created a series of instructional YouTube videos under the username 'HorsemartVideos' to give viewers a clearer idea of the sport than what is available elsewhere on the web. These videos are much more inviting, with the host walking the viewer through the basic elements of various polo shots across a series of six, four-minute clips. What Wiseman does not attempt to do is cover actual elements of game play. Video recording cannot capture the essence of game play concepts correctly from a ground-level point of view. An aerial view of the arena would be ideal, but due to the construction of polo arenas and the limitations of a camera's visual field it is not practical.

horsetv. "Polo | Rules of The Game." *YouTube.com*. **23 July 2009. 1 Oct. 2012.**

A six-minute video entitled "Polo | Rules of the Game" uploaded by user 'horsetv' briefly touches on "line of the ball" and "right of way" within the span of a minute and a half. During that time, heavily cartoonish animations are used, employed mostly for the sake of being able to show things quickly rather than for informational accuracy; the video never fully explains the concepts. Neither does it take advantage of the animation format to show overhead views of actual plays, nor show arena polo (which is where beginners usually start learning; this video shows only field polo).

***Rules Guide*. Hurlingham Polo Association, 2012. DVD. 2012. 2 Oct. 2012.**

The Hurlingham Polo Association's "Rule Guide" DVD comes closest to the optimal

format—filmed from a tall podium and displaying overlays showing the line of the ball

and right of way—however the film is strongly geared towards experienced polo players

preparing to take the umpire test and is not beginner-friendly. Additionally, the film is

presented on their website in a solid 30-minute chunk, meaning the user cannot easily

jump from one subject to another as they could on a website with specific sections for

each concept. This is the niche *GO Polo!* will fill.

GO Polo! aims to use the information presented in these outlets and compress it into

easily understandable terms, integrating it with fresh, relevant, and accurate animations to

present the game of polo in a way that has never been done before.

Design Ideation

Preliminary designs for *GO Polo!* include a layout similar to a website, with navigational elements organized across the header and content (animations and text) below. Breadcrumbs will orient the user to their location within the application, and also allow easy access to parent pages that are not available from the general navigation elements (i.e. accessing the parent page explaining the mallet grip from the child page that instructs the offside forward shot—users would be able to navigate back to the mallet grip page with a single click instead of having to go back through Equipment > Mallet > Mallet Grip).

Color and texture palettes of the application will evoke horses and polo culture. Varying shades of brown will create a visual metaphor of leather and arena footing, with brass and silver accent colors to represent the metallic parts of polo tack. Forest green, navy blue, and white are also popular colors for saddle pads and leg wraps, and may be used as well. Potential textural elements include leather grain to represent tack, plywood to reflect the arena walls, and thread stitching either over a cotton texture (saddle pads) or leather grain as a "close-up" of the tack.

Illustrations will be realistic and not cartoonish, and photography may or may not be included. Animations will be hand-drawn and ideally in color. Any animation dealing with the line of the ball or right of way will at least have a color distinction between players on the two teams, as well as color-coding the line of the ball to the appropriate team.

Typography will be simple, as the main goal is legibility. This project is intended to remain computer-based and not be used as printed material, so a sans-serif font is optimal for the majority of copy. A classy serif font will be used for headers to evoke the look of engraved nameplates used on bridles and saddles as a form of identification. *(See final pages of proposal for examples of design and layout considerations.)*

Methodological Design

GO Polo! will be developed as a two-dimensional interactive piece, integrating motion graphics/animation and illustration in a user-friendly UI developed with Adobe Photoshop, Illustrator, After Effects, and Flash CS6. The project will be accessible to a general audience of anyone that is interested in playing polo, but the core focus is on users aged 20–50. *GO Polo!* ultimately functions as a Flash application, accessible via file distribution or found on a specific webpage. Users are able to navigate through the app while reading pertinent information and watching helpful, point-reinforcing animations that detail core polo concepts. User navigation is tab-based with breadcrumb orientation and similar in layout to a normal website. This type of layout is also beneficial for and easily adapted to inserting additional sections in the future. Some animations included will be developed in such a way that they can be viewed normally or progressed through step-by-step should the user need clarification of what happens at specific moments of a polo play, swing, foul, etc.

Animations:

1.   * Opening animation on splash/title page (5sec)
2.   How to hold the mallet (15sec)
3.   How to hold the reins (15sec)
4.   Off-side forward shot (5sec)
5.   Off-side back shot (5sec)
6.   Near-side forward shot (5sec)
7.   Near-side back shot (5sec)
8.   Line of the ball (15sec, stepped through with explanations)
9.   Right of way (15sec, stepped through with explanations)

10.   Hooking (10sec)

11.   Bumping (10sec)

12.   Rotating (10sec)

13.   * QUIZ: Bad mallet hold (5sec)

14.   * QUIZ: Bad bump (5sec)

15.   * QUIZ: Bad right of way (no play) (5sec)

* These animations will only be included if time provides.

Implementation Strategies

This project will begin from scratch, built from illustrations and photography created and/or edited in Adobe Photoshop. Animations will be created in Adobe Flash and After Effects. Layout choices (color palette, orientation, setup, etc.) will be made first, then illustrations and animations will be created. Functionality (Flash coding) will be developed simultaneously with the art, to deal with potential issues as early as possible. With an experienced knowledge of the aforementioned programs necessary to complete this project, and having completed a project with similar interactivity on a smaller scale in the recent past, I trust that I have the skills and technical foundation necessary to design and implement this project.

Dissemination

GO Polo! will be distributed (via email or website) to those wishing to take polo lessons from several clubs local to Newport, RI, as well as any other clubs that request to use it for their beginning players. It may also be sent to the United States Polo Association for use on their website as there is currently nothing like this application in place. This would enable widespread, national dissemination.

Evaluation Plan

Usability testing will be implemented locally during the final stages of the application's completion and continue beyond the timeline of the MFA project with each incoming group of players. Near the end of Spring Quarter an initial survey of users will be taken, who will all fall under the core target audience of 20–50 years old with no prior polo experience. The survey will allow feedback to determine how clearly and succinctly the information is presented (and bring to light any issues that need correction), while the majority of testers will also then progress to their first actual polo lesson, where the true effectiveness of *GO Polo!* will be determined. If *GO Polo!* is displayed on a website, a user feedback submission form will be included that will send comments directly to me.

Pragmatic Considerations

Potential budget expenses include books and/or tutorials on Flash programming and animation; obtaining a camera (through rental or hiring of a photographer) to take photographs of polo players, horses, and arenas; and miscellaneous items such as external hard drives for backups and CD/DVDs for primary distribution. Work on the thesis will be budgeted alongside elective classes, to bring an estimated total of 12 credit hours taken in the Winter and Spring quarters.

Timeline

GO Polo! will reach its initial completed form over the course of Winter and Spring quarters, to be included in the Spring thesis show. Further feedback and testing will determine if additional changes need to be made. Research on the topic and initial design considerations were completed during Fall quarter, with artwork and programming developments taking place during Winter and early Spring. Implementation and evaluation will take place throughout the duration of Spring quarter, with documentation developed simultaneously. *(Full timeline chart included in final pages of proposal.)*

References

Bodine, Alicia. "How to Play Polo." *eHow*. 10 July 2008. Web. 15 Sept. 2012.

      <http://www.ehow.com/how_4423011_play-polo.html>.

Claytor, Tom. "THE RED BOOK of How to Play Polo." *Argentina Polo*. Web. 15 Sept.

      2012. <http://www.argentinapolo.com/poloredbook.html>.

"The Game." *Polo 101 — An Insider's Guide to Polo*. Web. 17 Sept. 2012.

      <http://www.polo101.com/category/about-polo/polo-the-game>.

HorsemartVideos. "How to Play Polo - An Introduction." *YouTube.com*. 21 Apr. 2010.

      Web. 15 Sept. 2012. <http://www.youtube.com/watch?v=b2XlRJsvUNU>.

horsetv. "Polo | Rules of The Game." *YouTube.com*. 23 July 2009. Web. 1 Oct. 2012.

      <http://www.youtube.com/watch?v=BUmACBzHi58>.

"Learning to Play the Sport of Polo." *SPORTPOLO Corporation*. Web. 7 Sept. 2012.

      <http://www.sportpolo.com/sport/Learning_Polo.htm>.

"Polo 101." *United States Polo Association*. Web. 6 Sept. 2012.

      <http://us-polo.org/index.php/polo-101>.

"Polo." *Wikipedia*. 10 Mar. 2012. Web. 7 Sept. 2012. <http://en.wikipedia.org/wiki/Polo>.

Rules Guide. Hurlingham Polo Association, 2012. DVD. *Rules Guide*. 2012. Web. 2 Oct.

      2012. <http://www.hpa-polo.co.uk/rulesregs/rulesdvd.asp>.

USPA Arena Rules. *United States Polo Association*. 2012. Web. 15 Sept. 2012.

      <http://www.us-polo.org/images/pdf/2012arenarules.pdf>.

GO Polo!
Creation Timeline

Creation Timeline	Winter Quarter 2012–13										Spring Quarter 2012–13									
	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
Layout / Logo / Icon Development	▓	▓																		
Background Graphics & Interface Creation		▓	▓	▓	▓															
Animations				2	2	2	2	1	1	1										
Programming		▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓					
User Testing															▓	▓				
Feedback Implementation																▓	▓	▓		
Defense Prep & Documentation																	▓	▓	▓	
Defense!																				▓

Week 11 of Winter Quarter is scheduled for "artwork catch-up."

The Winter holiday break (December 21–January 7) and Spring break (February 23–March 4th) are scheduled for user testing and catch-up.

Color Palette & Textural Options
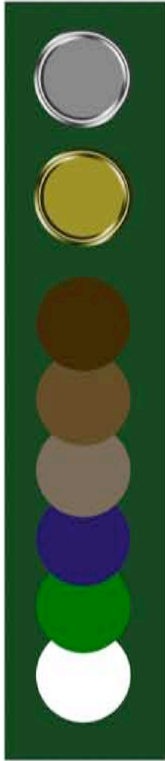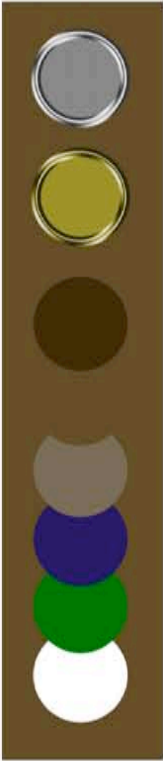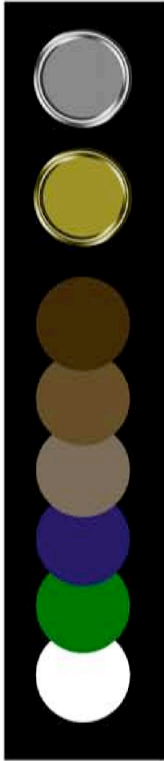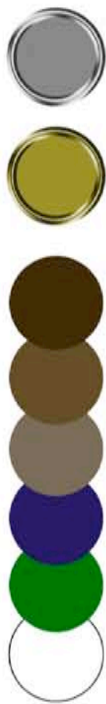
Blankets (Plaid)

Tack (Leather & Brass)

Teeny Tiny Tack

Saddlepad (Stitched)

Arena Footing (Sand/Dirt)

Copy Text Options (@ 8pt & 16pt)

Adobe Garamond Pro [Regular]
This is copy text.

Helvetica [Regular]
This is copy text.

Hoefler Text [Regular]
This is copy text.

Lucida Sans [Regular]
This is copy text.

Optima [Regular]
This is copy text.

Skia [Regular]
This is copy text.

Times New Roman [Regular]
This is copy text.

Title Text Options (@ 12pt & 24pt)

Century Schoolbook [Bold]
The Sport of Kings

COPPERPLATE [REGULAR/GOTHIC BOLD/GOTHIC LIGHT]
THE SPORT OF KINGS
THE SPORT OF KINGS
THE SPORT OF KINGS

ENGRAVERS MT [REGULAR]
THE SPORT OF KINGS

Imprint MT Shadow [Regular]
The Sport of Kings

LITHOS PRO [REGULAR]
THE SPORT OF KINGS

TRAJAN PRO [REGULAR]
THE SPORT OF KINGS

GO Polo!

Application Flowchart
© Shelley Kornatz MMXII
gopolo.wordpress.com

SPLASH

TITLE

ESSENTIALS

HOW TO PLAY

QUIZ

CLOTHING

REINS

MALLET

GAME OVERVIEW

RULES

GRIP

SWINGS

LINE OF BALL

RIGHT OF WAY

HOOKING

BUMPING

FOULS & PENALTIES

OFFSIDE FORE

NEARSIDE FORE

OFFSIDE BACK

NEARSIDE BACK
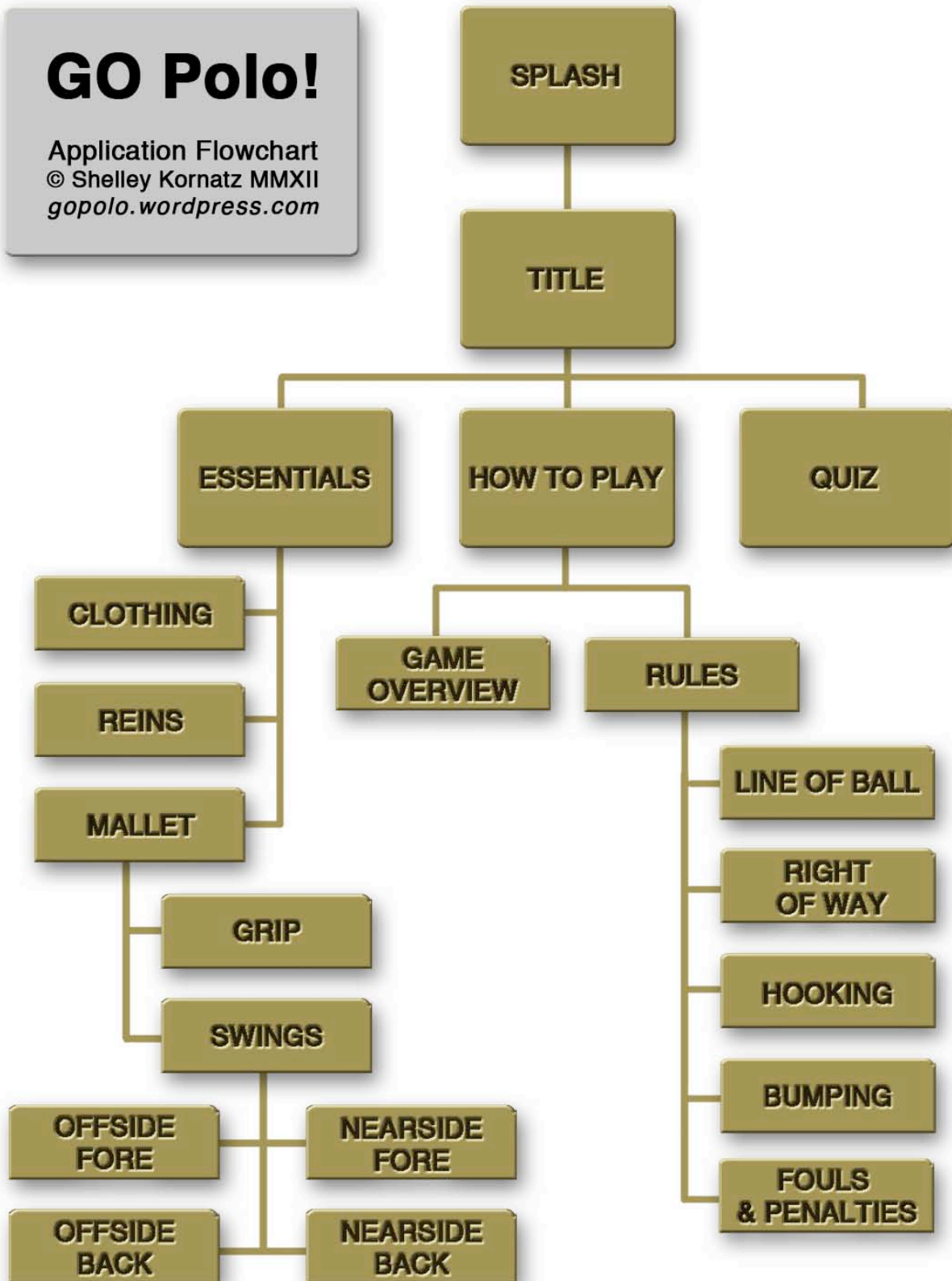
Choose A Section

Essentials

How To Play

The Rules of Arena Polo

Line of the Ball

Right of Way

Fouls & Penalties

Bumping

The Offside Fore Shot

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla quam velit, vulputate eu pharetra nec, mattis ac neque. Duis vulputate commodo lectus, ac blandit elit tincidunt id. Sed rhoncus, tortor sed eleifend tristique, tortor mauris molestie elit, et lacinia ipsum quam.

Play Full

Play Steps

1 — 2 — 3
Step 1   Step 2   Step 3

Appendix B. General Survey (released via SurveyMonkey.com)

1. Welcome! Thank you for your time.
Please rate your experience playing polo.

◯ No experience

◯ 1–2 lessons

◯ Several weeks of lessons

◯ Several months of lessons

◯ Several years of lessons

◯ Played polo for 5+ years

Which internet browser are you currently using (e.g. Chrome, Firefox, IE, etc.)?

[   ]

2. Based on your previous knowledge of polo, how helpful did you find the information in the application?

	(1) Not helpful at all	(2)	(3) Somewhat helpful	(4)	(5) Very helpful
	◯	◯	◯	◯	◯

If you have taken some lessons already, would you have felt more prepared for your first lesson had you reviewed this application first?

[   ]

3. On pages with explanatory text, how did you feel about the amount of information presented?

	(1) Too little information	(2)	(3) Just enough information	(4)	(5) Too much information
	◯	◯	◯	◯	◯

Were there any particular sections you felt had too much or too little information?

[   ]

4. On pages with explanatory text, would you like an audio option with narrative speech?

◯ Yes

◯ No

5. Regarding the BASICS section:
On the pages explaining reins/mallet grip, were the illustrated steps enough to understand the concept?

◯ Yes

◯ No — I would rather have more text explanation

◯ No — I would rather have an animation similar to the mallet swing pages

◯ Other (please specify)

```

```

6. Regarding the MALLET SWINGS pages:
Did the "Purpose of the Swing" section give you a good idea of how and when to use each shot?

◯ Yes

◯ No

◯ I need to be on a horse to understand this

7. Regarding the MALLET SWINGS section:
Were the two types of animations for each swing helpful?

◯ Yes, both helped me understand the swing

◯ Only the "full" animation was helpful

◯ Only the "steps" animation was helpful

◯ Only the text explanation was helpful

◯ Nothing was helpful; I still don't understand

8. Did you find any sections hard to understand?

◯ Yes

◯ No

Please list the pages you found confusing.

```

```

9. Please rate your experience navigating through the site.

	(1) Navigation was very difficult	(2)	(3) Navigation was okay	(4)	(5) Navigation was very easy
	○	○	○	○	○

Any particular sections you felt weren't intuitive or took too long to navigate through?

[   ]

10. After reviewing the GO!Polo application, has your level of interest in playing polo changed?

	(1) I want to play polo much less	(2)	(3) My level of interest remained the same	(4)	(5) I want to play polo much more
	○	○	○	○	○

Thank you! Any final comments?

[   ]

Done

GO!Polo
Discovering the "Sport of Kings"

Imagine RIT
GO!Polo Thesis Survey

Thank you for your time!
Feel free to leave any additional comments on the back of this sheet—all feedback is appreciated!

1.) Please rate your experience navigating through the application:

1	2	3	4	5

Navigation was very hard

Navigation was okay

Navigation was very easy

2.) How do you feel about the amount of information presented?

1	2	3	4	5

Too little information

Just enough information

Too much information

3.) Which type(s) of page did you find most helpful? (Please check all that apply.)

○ Pages with mostly text and illustrations: "Game Overview"/"Hooking"/"Bumping"

○ Pages with animation: "Right of Way"/"Line of the Ball"/ all "Swings" pages

○ Pages with step-by-step instructions: "Mallet Grip"/"Reins Grip"

○ Pages with interaction: "Clothing"/"Fouls & Penalties"

○ The "Quiz" Section

4.) Did you find any sections hard to understand?

○ Yes   If yes, please list any pages you found confusing: _____
○ No   _____

5.) If you decided to take a polo lesson, do you feel more prepared after viewing this app?

1	2	3	4	5

I don't feel prepared at all

I feel somewhat prepared

I'm ready to play right now!

7. Bibliography

Bodine, Alicia. "How to Play Polo." *eHow*. 10 July 2008. Web. 15 Sept. 2012.

      <http://www.ehow.com/how_4423011_play-polo.html>.

Claytor, Tom. "THE RED BOOK of How to Play Polo." *Argentina Polo*. Web.

      15 Sept. 2012. <http://www.argentinapolo.com/poloredbook.html>.

"The Game." *Polo 101 — An Insider's Guide to Polo*. Web. 17 Sept. 2012.

      <http://www.polo101.com/category/about-polo/polo-the-game>.

HorsemartVideos. "How to Play Polo - An Introduction." *YouTube.com*. 21 Apr.

      2010. Web. 15 Sept. 2012. <http://www.youtube.com/watch?v=b2XlRJsvUNU>.

horsetv. "Polo | Rules of The Game." *YouTube.com*. 23 July 2009. Web. 1 Oct.

      2012. <http://www.youtube.com/watch?v=BUmACBzHi58>.

"Learning to Play the Sport of Polo." *SPORTPOLO Corporation*. Web. 7 Sept. 2012.

      <http://www.sportpolo.com/sport/Learning_Polo.htm>.

"Polo 101." *United States Polo Association*. Web. 6 Sept. 2012.

      <http://us-polo.org/index.php/polo-101>.

"Polo." *Wikipedia*. 10 Mar. 2012. Web. 7 Sept. 2012.

      <http://en.wikipedia.org/wiki/Polo>.

Price, Steven D., Barbara Burn, Gail Rentsch, and David A. Spector, eds. *The Whole*

      Horse Catalog. Revised & Updated ed. New York, NY: Simon & Schuster, 1998.

      Print.

Rules Guide. Hurlingham Polo Association, 2012. DVD. *Rules Guide*. 2012. Web.

      2 Oct. 2012. <http://www.hpa-polo.co.uk/rulesregs/rulesdvd.asp>.

USPA Arena Rules. *United States Polo Association*. 2012. Web & Print. 15 Sept. 2012.

    <http://www.us-polo.org/images/pdf/2012arenarules.pdf>.

Winnie, Doug. *Fundamentals of ActionScript 3.0: Develop and Design*. Berkeley, CA:

    Peachpit Press, 2012. Print.