GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:
Copy and paste current course information from Class Search/Course Catalog.

College/School: College of Integrative Sciences and Arts
Department/School: IHC
Prefix: HST Number: 319 Title: History of Aviation

Units: 3
Course description: The history of aviation, focusing on technical, political, economic, social and cultural aspects.

Is this a cross-listed course? No
If yes, please identify course(s):

Is this a shared course? No
If so, list all academic units offering this course:

Note: For courses that are crosslisted and/or shared, a letter of support from the chair/director of each department that offers the course is required for each designation requested. By submitting this letter of support, the chair/director agrees to ensure that all faculty teaching the course are aware of the General Studies designation(s) and will teach the course in a manner that meets the criteria for each approved designation.

Is this a permanent-numbered course with topics? No
If yes, all topics under this permanent-numbered course must be taught in a manner that meets the criteria for the approved designation(s). It is the responsibility of the chair/director to ensure that all faculty teaching the course are aware of the General Studies designation(s) and adhere to the above guidelines.

Chair/Director Initials: (Required)

Requested designation: Global Awareness - G

Mandatory Review: (Choose one)

Note: a separate proposal is required for each designation.

Eligibility: Permanent numbered courses must have completed the university's review and approval process. For the rules governing approval of omnibus courses, contact Phyllis.Ludic@asu.edu.

Submission deadlines dates are as follows:
For Fall 2018 Effective Date: October 1, 2017
For Spring 2019 Effective Date: March 10, 2018

Area(s) proposed course will serve:
A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:
Complete and attach the appropriate checklist:
- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Arts and Design core courses (HU)
- Social-Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SO/SG)
- Cultural Diversity in the United States courses (C)
- Global Awareness courses (G)
- Historical Awareness courses (H)

A complete proposal should include:
- Signed course proposal cover form
- Criteria checklist for General Studies designation being requested
- Course catalog description
- Sample syllabus for the course
- Copy of table of contents from the textbook and list of required readings/books

It is respectfully requested that proposals are submitted electronically with all files compiled into one PDF.

Contact information:
Name: Valerie Adams E-mail: valerie.adams@asu.edu Phone: 480-727-1526

Department Chair/Director approval: (Required)
Chair/Director name (Typed): Brooks Simpson Date: 2-24-19
Chair/Director (Signature): [Signature]

Rev. 3/2017
Global Awareness: Rationale and Objectives

Human organizations and relationships have evolved from being family and village centered to modern global interdependence. The greatest challenge in the nuclear age is developing and maintaining a global perspective which fosters international cooperation. While the modern world is comprised of politically independent states, people must transcend nationalism and recognize the significant interdependence among peoples of the world. The exposure of students to different cultural systems provides the background of thought necessary to developing a global perspective.

Cultural learning is present in many disciplines. Exposure to perspectives on art, business, engineering, music, and the natural and social sciences that lead to an understanding of the contemporary world supports the view that intercultural interaction has become a daily necessity. The complexity of American society forces people to balance regional and national goals with global concerns. Many of the most serious problems are world issues and require solutions which exhibit mutuality and reciprocity. No longer are hunger, ecology, health care delivery, language planning, information exchanges, economic and social developments, law, technology transfer, philosophy, and the arts solely national concerns; they affect all the people of the world. Survival may be dependent on the ability to generate global solutions to some of the most pressing problems.

The word university, from universitas, implies that knowledge comes from many sources and is not restricted to local, regional, or national perspectives. The Global Awareness Area recognizes the need for an understanding of the values, elements, and social processes of cultures other than the culture of the United States. Learning which recognizes the nature of others cultures and the relationship of America’s cultural system to generic human goals and welfare will help create the multicultural and global perspective necessary for effective interaction in the human community.

Courses which meet the requirement in global awareness are of one or more of the following types: (1) in-depth area studies which are concerned with an examination of culture-specific elements of a region of the world, country, or culture group, (2) the study of contemporary non-English language courses that have a significant cultural component, (3) comparative cultural studies with an emphasis on non-U.S. areas, and (4) in-depth studies of non-U.S. centered cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology, multinational corporations, migration, and the threat of nuclear war.

Reviewed 4/2014
Proposer: Please complete the following section and attach appropriate documentation.

### ASU--[G] CRITERIA

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th><strong>Identify Documentation Submitted</strong></th>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>GLOBAL AWARENESS [G]</strong></td>
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<td></td>
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<td><strong>1. Studies must be composed of subject matter that addresses or leads to an understanding of the contemporary world outside the U.S.</strong></td>
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<td><strong>2. The course must match at least one of the following descriptions: (check all which may apply):</strong></td>
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<tr>
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<td><strong>a. In-depth area studies which are concerned with an examination of culture-specific elements of a region, country or culture group. The area or culture studied must be non-U.S. and the study must contribute to an understanding of the contemporary world.</strong></td>
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<td><strong>b. The course is a language course for a contemporary non-English language, and has a significant cultural component.</strong></td>
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<td><strong>c. The course is a comparative cultural study in which most, i.e., more than half, of the material is devoted to non-U.S. areas.</strong></td>
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<td><strong>d. The course is a study of the cultural significance of a non-U.S.-centered global issue. The course examines the role of its target issue within each culture and the interrelatedness of various global cultures on that issue. It looks at the cultural significance of its issue in various cultures outside the U.S., both examining the issue’s place within each culture and the effects of that issue on world cultures.”</strong></td>
</tr>
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</table>
Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>How course meets spirit</th>
<th>Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)</th>
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</thead>
<tbody>
<tr>
<td>2d: study the cultural significance of a non-U.S. centered global issue</td>
<td><strong>SAMPLE:</strong> The course examines the cultural significance of financial markets Japan, Korea, and the UK.</td>
<td><strong>SAMPLE:</strong> Module 2 shows how Japanese literature has shaped how Japanese people understand world markets. Module 3 shows how Japanese popular culture has been changed by the world financial market system. Modules 4 &amp; 5 do the same for Korea and modules 6 &amp; 7 do the same for the UK.</td>
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<tr>
<td>1</td>
<td>Aviation has been a driving force in the global economy since the first successful heavier-than-air flights in 1903. It has also enabled the sharing of cultures and has directly promoted global cultural awareness through the generations. It has also shaped diplomacy, international relations and global military conflicts.</td>
<td>Every chapter in the primary textbook is an international history. In fact, the U.S. played very little role in the development of aviation between 1903-1927. Likewise, every class topic (I don't use modules) is international in spirit and fact. Specific examples: The two world wars are global, and the aviation contributions towards propelling each country’s economy AND technological innovation is made clear; the advent of commercial flight (carrying passengers), which starts in England and France immediately after WWI, makes the world smaller, forces cultural awareness, and spurs the global economy (in fact, tourism is the major economy for many countries as a direct result of aviation); some international companies simply do not exist without aviation (Amazon Prime one day delivery doesn't exist without aviation). The regulation of the airspace is also an international effort and the students read an article on just that, &quot;Proposals for the Int'l Control of Aviation 1920-1945.&quot; With regard to the Cold War the students also read an article that explains how the SR-71 was used by Reagan over Central America to intimidate the USSR.</td>
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</table>
More than forty years of the 20th century was dominated by the Cold War - a global conflict - and this course looks closely at the development of foreign air forces and space programs. In addition, every country is unique over the years in their economic support of the industry (think private enterprise verses national ownership), and this course compares those approaches, particularly within commercial aviation. Finally, aviation has been used by various countries to advance a political agenda, such as empire building.

A supplemental textbook used is Two Sides of the Moon, which is a double autobiography, one an American astronaut, and one a Soviet cosmonaut. Looking at each nation's space program since 1945 through 1979 allows the students, through this primary source, have a deep understanding of the cultural differences between the two superpowers and see how each side approached issues of technology, bureaucracy, and politics. A written assignment has the students picking a non-U.S. country to write a report on their development of commercial aviation. Finally, a good deal of attention is given to the British use of aviation to unite its empire, establishing Imperial Airways to do just that. There is a great article that looks at how the Wizard of Oz was used in the USSR (recall the wizard had a balloon) and the article discusses the Soviet Union's lighter than air aviation history.

The very topic of the course, aviation, is an international topic. Certainly the U.S. is a dominate force starting in the 1930s, but that does not lessen the significant contributions of others. Comparative cultures are looked at, especially with regard to race and women. The growth of tourism is also very international.

Students read two articles to discuss in class: One is about the 1921 Tulsa Race Riots and how the white community bombed the black section of Tulsa via aircraft and the subsequent national debate within the black community as to how this new technology of aviation ought to be embraced. The other journal article is about the first flight to South Africa, made in 1920, from London. This article explores not only how the white man used aviation to frighten and threaten the black population, but also explores politics, in that the flight was used to unite the British Empire, but also, within South Africa, the flight had implications for the divide between the British and the white Dutch descendents, the Afrikaners. That same lesson includes an article on power and imperialism and aviation. In addition, the book referenced above, Two Sides of the Moon, fulfills this requirement of cultural comparisons. Another specific example is the attention given in class to tourism. Using airline campaigns/advertisments, especially in Latin American and European countries, from the 1930s to present day, students can see how each country choose to represent itself - what was the draw for a tourist to visit. These cultural comparisons help students understand that tourism allowed/allows people from all
around the world experience different cultures. In addition to the ads, the students read two separate articles on tourism and the airlines, one on Pan Am during its flying boat era (1920s-1930) and one on how the growth of hotels, travel books, city night life, etc. were all directly linked to the growth of post-WWII tourism, and the economic impact that all has had on globalization.
HST 319 - History of Aviation

Course Description
The history of aviation, focusing on technical, political, economic, social and cultural aspects.

Enrollment requirements
Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 45 hours; Credit is allowed for only HST 319 or HST 306 (Aviation History)

Reserved Seat Information
Seats in this class have been reserved for students in the specified programs, majors or groups listed below. Reserved seats are subject to change without notice.

<table>
<thead>
<tr>
<th>Reserved Groups</th>
<th>Fulton Polytechnic School Engineering undergraduate student</th>
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<tbody>
<tr>
<td>Reserved Available Seats</td>
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</tr>
<tr>
<td>Students Enrolled</td>
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<tr>
<td>Total Seats Reserved</td>
<td>20</td>
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<tr>
<td>Reserved Until</td>
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</table>

<table>
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<tr>
<th>Reserved Groups</th>
<th>Polytechnic Programs</th>
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<tbody>
<tr>
<td>Reserved Available Seats</td>
<td>3</td>
</tr>
<tr>
<td>Students Enrolled</td>
<td>7</td>
</tr>
<tr>
<td>Total Seats Reserved</td>
<td>10</td>
</tr>
<tr>
<td>Reserved Until</td>
<td>n/a</td>
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</tbody>
</table>

Non Reserved Available Seats: 0

Offered by
## Additional Class Details

**Special notes:** Poly.

**General Studies:** H

**Units:** 3

**Repeatable for credit:** No

**Component:** Lecture

**Instruction Mode:** In-Person

## Important Deadlines

**Last day to enroll:** January 13, 2019

**Drop deadline:** January 13, 2019

**Course withdrawal deadline:** March 31, 2019

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### Spring 2019 | Class # 29344

**Seats Open:** 23 of 30

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<thead>
<tr>
<th>Add Class</th>
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<tbody>
<tr>
<td>Days</td>
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<tr>
<td>Dates</td>
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<td>Start</td>
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<td>End</td>
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<tr>
<td>Location</td>
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<tr>
<td>Instructor</td>
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</table>

**Fees:** None

**Syllabus**

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**Book List**

**Required Items**

**Title:** War in the Air
HST 319: Aviation History

Sample Syllabus for General Studies Proposal for “G” Global Awareness

Location
Days and Times
Arizona State University: Polytechnic Campus

Instructor Information

Instructor: Valerie Adams, Ph.D.
Phone: 480-727-1526
email: valerie.adams@asu.edu
Office: Santa Catalina, 251 J

“When once you have tasted flight, you will forever walk the earth with your eyes turned skyward.” Leonardo da Vinci

Course Description & Methodology

This is an upper division course that explores the technical, political, economic, social and cultural forces upon the growth of aviation. In addition to a careful examination of the people and aircraft involved in aviation history, students will also study how the explosive growth of aviation and aerospace has had an invaluable influence upon the economic, military, cultural and societal development of the world. **Aviation has single handedly propelled 20th and 21st century globalization.**

The goals set for the class are to provide an understanding of the rapid growth of the aviation industry and an appreciation of the increasing importance of aviation in not only economic and military affairs, but also its importance upon civil rights, feminism, popular culture, imperialism, international diplomacy and so forth. In addition, the students will learn good research, writing and critical thinking skills. The assigned material allows for the students to gain a complete understanding of how historical events directly affect the present and the future, providing an opportunity to discover the challenges that the 21st century poses. It is expected that students graduate with an understanding and appreciation of the broad overview of aviation history, learned through the texts, videos, supplemental readings, various written assignments, class discussion, material culture and guest speakers.

In an upper-level class such as this, students will understand that history is complex, changing and reflective of individual historians. History is interpretation and the class materials used this semester offers opportunities every week to think critically about various interpretations and investigate significant questions. You will come to appreciate that history is not names and dates to be memorized, but rather history is subject to interpretation and evidence and can be complex and messy. For example, these are some questions we will answer during the semester:

- Were the Wright Brothers really the kind of people you think they were? Were there ramifications for aviation because of the Bolshevik Revolution? Why was Charles Lindbergh a hero in 1927 and a villain by 1940? How could a technology glorifying progress be used so callously to bomb people of color in the 1920s? In what ways was aviation used as a tool of imperialism? Why was the doctrine of strategic bombing different during World War II for each country, particularly different between the U.S. and Great Britain, and what of the moral and ethical costs of strategic bombing? What conclusions can be drawn from the history of foreign air carriers, many of whom are flagships for the country, not for the free-enterprise entrepreneur as in the U.S. and how is it determined who gets to fly in a country’s air space? If Air Traffic Controllers are essential to the industry, and thus the economy and national security, why weren’t their requests for modest labor gains granted in
How did minorities and women make opportunities for themselves within the industry? Were there specific circumstances that led the Soviet Union to excel at early space exploration? How did the International Space Station become “international” and what will it mean to have the People’s Republic of China entering the arena of space exploration? Did the interruption in air travel after 9-11 have an international impact on the global economy and international regulations of the aviation industry? Are the business models and philosophy different between Boeing and its European competitor Airbus? Most important, you will come to appreciate that an understanding of our past is essential in understanding and embracing the present. To help you understand and appreciate aviation history I teach this class using a blend of didactic lecture and the Socratic Method. Since learning is centered on class discussion it is imperative that you be prepared when you come to class. I have a responsibility to foster a curiosity about history and help you to hone your critical thinking skills, but you have a responsibility to be prepared for class.

Finally, in any history course, you will have opportunities to develop a range of skills that will serve you well while you are a student at ASU. You will sharpen your writing skills, improve your critical thinking skills, and practice your time management skills all while learning about the course topic.

**Performance Objectives:**
Upon completion, students will be able to
1. explain the major events of aviation history of the 20th and 21st centuries;
2. explain the developments that led to the explosive growth of aviation and aerospace transport;
3. correlate the development of aviation with the growth in power and influence of the United States and world;
4. understand how aviation has had a cultural influence;
5. understand how aviation can reflect societal norms and values;
6. relate developments in aerospace science to their historical antecedence;
7. analyze current problems faced by the industry and offer solutions;
8. make judgments regarding the future of aerospace travel based upon knowledge of the history of aviation.

**Required Course Textbooks**


**Graded Work**

*Short Essay on Curtiss book*
You will write a three-page essay arguing why Glenn Curtiss ought to be considered a founder of modern aviation. There is no need for extra research. You will only need the book itself. This is an exercise in understanding the thesis and an opportunity for me to evaluate your writing.
**Research Paper on International Space Exploration, based upon the Scott/Leonov book**

The book is to help you think critically about important questions regarding aviation, individuals, government and international relations. A double-autobiography, the Soviet cosmonaut and American astronaut chronicle the similarities and differences between the Soviet and U.S. space programs against the backdrop of the Cold War. You will need to research the space programs of Europe, Japan, China, India and the United Arab Emirates. That research and the information in the Scott/Leonov book, will allow you to write a comparative analysis investigating factors for a country’s success in space exploration and offer conclusions about how international cooperation is good or bad for space exploration and potential consequences of cooperation or competition. Complete instructions are to be found in a separate document.

**Pop-Up Museum Exhibit**

The history unit at Polytechnic holds an annual pop-up museum, which is a project-based learning opportunity to present a unique exhibit on a topic decided by the student group. The exhibit will be on display to the public for a day. Students are required to utilize primary and secondary sources and are encouraged to seek material culture artifacts and/or build models themselves. Specific instructions are to be found in a separate document and will be discussed further in class.

**End of Term Project**

The last two days of class will consist of class presentations of a project that is to be in the form of a paper or web site or voice over power point. Primary and secondary sources will be expected. The class presentation will be ten minutes in length and provide their classmates with an understanding of an aspect of aviation that most interests you. Complete instructions are to be found in a separate document.

**Homework Assignments**

There are four homework assignments. These are written and to be handed in during class. Each is roughly a two-page, double-spaced description. Topics: minorities in aviation, innovator or adventurer, foreign air carrier, foreign air force.

**Exams**

There will be an open book final exam in class. The final exam is comprehensive and will be largely essay-based. The University sets the final exam schedule. Ours will be in our classroom on (date and time).

**Class Participation**

Come to class every day having completed the readings and be engaged and complete your work on time. While a formal attendance sheet will not be circulated, it is expected that you attend class, complete all the assignments, whether they are grade assignments or not, and be engaged in the classroom. Cutting class is a poor decision. A rough estimate is that every lecture is 3% of the course, not to mention tuition money out the door. If you are a student who does not like to speak in class, there are other ways to engage in the classroom with body language. That means no sleeping, day dreaming, staring at your smart phone, doing your math homework. If I see your laptop screen is not on a word/note taking page, you will lose your privilege of using it in class.
Grading

As the following table suggests, all the work in the course is important because all of it is designed to help you achieve the general learning goals.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Essay on Glenn Curtiss using <em>Unlocking the Sky</em></td>
<td>10</td>
</tr>
<tr>
<td>Research Paper on International Space Exploration using <em>Two Sides of the Moon</em></td>
<td>20</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>20</td>
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<tr>
<td>(5% each)</td>
<td></td>
</tr>
<tr>
<td>Pop Up Museum Exhibit</td>
<td>15</td>
</tr>
<tr>
<td>End of Term Project</td>
<td>20</td>
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<tr>
<td>Final Exam</td>
<td>15</td>
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<td><strong>Total</strong></td>
<td><strong>100</strong></td>
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Grading Scale

<table>
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<tr>
<th>Grade</th>
<th>Score</th>
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<tr>
<td>A+</td>
<td>98</td>
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<tr>
<td>A</td>
<td>95</td>
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<tr>
<td>A-</td>
<td>90</td>
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<tr>
<td>B+</td>
<td>88</td>
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<td>B</td>
<td>85</td>
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<td>D</td>
<td>60</td>
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<td>E</td>
<td>0-59</td>
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- Grades will be based on the following definitions: The grade of C shall indicate competent, acceptable performance and learning [average]; the grade of B shall indicate superior performance and learning [above average]; the grade of A shall indicate excellent performance and learning [superior]. With moderate effort and preparation, a grade of C should be obtainable to everyone in this class. An A will require vigorous effort and preparation.
NOTE: I HIGHLIGHTED IN THOSE READINGS THAT ARE INTERNATIONAL IN SPIRIT AND LETTER. Please understand that the main textbook (“Grant”) is a global history of aviation, so all of those chapters apply to the “G” designation.

HST 319: History of Aviation

**Course Reading Schedule**

Note: The readings and films are to be completed before class period that day. As the semester goes along this schedule may be changed, but of course I will alert you to any changes.

When you see “Grant” that refers to your main textbook and when you see “Coonts” that refers to the stories in War in the War. Be sure to complete any additional materials in the weekly folders (indicated in purple ink) before class that week as well.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Textbook Readings/Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Jan. 8 Lighter than Air</td>
<td>Read: Grant, pages 9-37, Lighter than Air in folder, In Barrowed Balloons…Soviet Aviation, Post to the discussion board by Friday</td>
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<td>2.</td>
<td>Jan. 15 The Bishop Boys</td>
<td>Read: Grant, pages 38-65, Birds, Bicycles and Biplanes, Footage of First Flight, Bio on Wright Brothers</td>
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<td>Jan. 17 Developing the Airplane</td>
<td>Read: Birdmen, War and Barnstormers, The First Test Pilots</td>
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<td>3.</td>
<td>Jan. 22 World War I</td>
<td>Read: Eugene Bullard</td>
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<td>Jan. 24 Unlocking the Skies</td>
<td>Read: Grant, pages 66-93, Glenn Curtiss book</td>
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<td>4.</td>
<td>Jan. 29 World War I continued</td>
<td>Read: Grant, pages 94-10, Coonts: all World War I</td>
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<td></td>
<td>Jan. 31 Air Mail</td>
<td>Read: Slim Lewis Slept Here, Proposals for Int’l Control of Aviation, 1920-1945, Essay on Curtiss book</td>
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<tr>
<td>5.</td>
<td>Feb. 5 Race and Empire</td>
<td>Read: Tulsa Race Riots, 1920 Flight to S. Africa, Regimes, Power and Int’l Aviation</td>
</tr>
</tbody>
</table>
Homework #1 Due in Class

Feb. 7 Adventurers and Innovators

Read: Grant, pages 106-164
Read: Bessie Coleman
Read: Jimmy Doolittle
Read: Over Everest

Feb. 12 Guest Speaker on Flying Boats

Read: Grant, pages 166-185
Read: Age of Flying Boats in Art & Culture

Feb. 14 The Golden Age of Flight

Read: Charles Lindbergh: The Hero

Homework #2 Due in Class

Feb. 19 Aviation in Literature, Art and Pop Culture

Read: Aviation in Literature
Read: Peace is Our Profession

Feb. 21 Transforming the Army Air Corps

Read: Transforming the Army Air Corps

Feb. 26 The Second World War

Read: Grant, pages 186-259
Read: Aleutian Island Campaign
Watch: Air War

Feb. 28 The Second World War

Read: Coonts: All WWII stories
Read: Aviation in Arizona
Watch: Burma Campaign

March 4-8 SPRING BREAK

10. March 12 The Second World War

Watch: Tuskegee Airmen
Watch: Female Pilots in WWII

March 14 Cold War: Berlin & Korea

Read: Grant, pages 262-331
Read: Coonts, “Spad Pilot”
Read: A Single Daring Act
Read: Stick and Rudder University

11. March 19 Cold War: Vietnam

Read: Coonts: “Ia Drang Valley,” “A Filthy Little War,” “The Professionals,” “Carrier Pilot,” & “Hotdoggin’ It”
Read: Defining Dustoff
Read: Operation Homecoming

March 21 Guest Speaker

TBD
12. March 26  To the Moon  
Read: Grant, pages 332-373  
Read: Two Sides of the Moon  
Hand in Research Paper on Space  

March 28  NASA today  
Read: Minorities in the Space Age  
Read: Rocket Man  
Watch: Beyond the Moon  

13. April 2  Flying the Friendly Skies  
Read: Grant, pages 374-389  
Watch: Pan Am  
Read: Minorities in Commercial Aviation  
Homework #3 Due in Class  

April 4  Birth of Mass Tourism  
Read: The Jet Set  

14. April 9  POP-UP MUSEUM DAY  

April 11  Economic Decline  
Read: PATCO documents  
Read: Economic Pressures on Airlines post-Deregulation  

15. April 16  Growth of Airbus & Middle East Unrest  
Watch: Airbus A-380  
Read: Israeli Air Force  
Homework #4 Due in Class  

April 18  21st Century  
Read: Grant, pages 424-439  
Watch: CSPAN Round Table on 9/11  
Read: Felix Baumgartner  
Read: Ballooning Around the World  

16. April 23  Projects due in class Tuesday and we’ll have Thursday to present as well  

April 30 (Tuesday)  FINAL EXAM  2:30pm – 4:20pm
HST 319: History of Aviation

For the “G” and “L” General Studies designation proposals

Instructions for the International Aerospace Research Paper
Instructions for the End of Term Project
Writing Tips

International Aerospace Research Paper:

General Statement: You will have to submit an 8-10-page research paper (that means 8-10 pages of text, not cover pages, bibliographies, etc.). Write well. That which is written in haste is read without pleasure. I have provided some tips below that will help you. Assume, since I made the tips, that I will be annoyed if I read your paper and see contractions, first-person pronouns, etc. Remember too that the Writing Center is your friend. Use them. Each campus has one. You will upload the paper into SafeAssign. This is to be an original paper for this class – you cannot reuse another paper, nor even parts of another paper you’ve written.

Logistics: Margins ought to be normal settings, fonts & point size that are standard (Times New Roman 12 point is a good one), and double-spaced. MLA, APA or Chicago are all citation styles I will accept. Number your pages (the cover page is not page 1). Include a cover page and a Works Cited or Bibliography page. You are required to consult no less than four primary sources and three secondary sources. You may certainly use class material, but class material will not count towards the seven sources referenced above.

Directions: The Scott/Leonov book will help you think critically about important questions regarding aviation, individuals, government and international relations. A double-autobiography, the Soviet cosmonaut and American astronaut chronicle the similarities and differences between the Soviet and U.S. space programs against the backdrop of the Cold War. You will need to research the space programs of Europe, Japan, China, India, the United States and the United Arab Emirates. Your paper is a research paper into the history of the space programs of each of the six regions listed above. That research and the information in the Scott/Leonov book will allow you to write a comparative analysis investigating factors for a country’s success in space exploration and offer conclusions about how international cooperation is good or bad for space exploration and potential consequences of cooperation or competition.

END OF TERM PROJECT:

General Statement: The project is a presentation, but one that will be collected as well as presented to the class. You may pick a topic related to aviation or aerospace history that interests
you. You will give a ten-minute presentation to the class and you will have to turn in a paper, voice over power point, web page, or another approved format.

**Directions:** As you did with the earlier research paper, you must consult primary and secondary sources to understand the history of any aviation related topic. An example of a web page and a voice over power point will be shown in class. You could write a paper instead. However you decide to collate your research, you will have to condense it with a ten-minute class presentation. The purpose is two-fold. One is yet another opportunity to sharpen your research, writing and critical thinking skills while diving into a topic in depth. Two, you have an opportunity to learn about several topics (likely topics not covered in class) in short bursts from your classmates while having a chance to create a project that does not need to be a traditional history term paper. The presentations will occur the last week of classes.

**WRITING TIPS FOR ALL WRITTEN ASSIGNMENTS**

**Late Papers:** If your paper assignment is late, I will reduce your grade by one third of a letter for each day that it is late. For instance, if you earn a “B” on a paper that was due on Monday but you turn it in on Wednesday, I will record “C+” in the grade book. **I CANNOT ACCEPT PAPERS AFTER the last day of class.**

A word on plagiarism: Plagiarism in papers is also intolerable and grounds for failure. I take this very seriously and I ask that you do as well. As explained in one writing manual:

> Your research paper is a collaboration between you and your sources. To be fair and ethical, you must acknowledge your debt to the writers of these sources. If you don’t, you are guilty of plagiarism, a serious academic offense. Three different acts are considered plagiarism: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words.


**Grading Criteria for Paper:** A history paper is graded on historical content, but the final grade also reflects the quality of writing and organization of information and quality of evidence.

The paper will be graded by the same standards I set for all written work in all my classes. (1) The quality of your research is critical. A paper using only Wikipedia and Encarta is not quality research; a paper using monographs and scholarly articles from university libraries is quality research. A paper using multiple sources from the same author is not quality; a paper using a
variety of sources and scholars is quality. This research puts forth your argument, or historical content, which I view as a third of the paper’s whole. (2) Another standard is your organization. A successful research paper will state a clear thesis statement upfront. The reader ought to know exactly what the paper is about, what the argument is, and what evidence will be used to support said argument. In addition, how your paper is organized lends to its overall persuasiveness. If the paper is not organized successfully the reader will be confused. An argument ought to build up in a logical, obvious fashion. (3) Finally, a poorly written paper obscures your argument and research. Typos, missed words, misspellings, missing or incorrect punctuation are all errors to be caught in drafts. Writing first, second and even third drafts are critical in having a polished final draft to turn in for grading. Samuel Johnson once quipped that what is written without care is read without pleasure. Keep that in mind. Reading your work out loud is a helpful way to improve your writing. However, poor writing goes beyond typos. Poor writing includes paragraphs that fail to follow the topic sentence, run on paragraphs, passive voice, verb agreement, and obtuse or profuse language. Clean, clear and concise - that is the mantra to learn.

An A will be given to any paper that is excellent in argument, organization, and style. An A paper is strong enough that the entire class could benefit from reading it. To earn an A you must make an interesting, believable argument that adds significantly to – or goes beyond – what you have read in class. A-quality work must also follow a logical structure, with unified paragraphs and transitions that clearly signal how each section relates to the central argument. In addition, A papers have to be well-written, using lively prose that is free of spelling, grammatical, and idiomatic mistakes.

A B paper is one that is deficient in argument, organization or style, or shows minor problems in two or three of them. A B grade is also one to be proud of. It recognizes excellent work that demonstrates a sound grasp of the major themes and events covered in the readings and lectures. Without necessarily achieving the originality of A-quality work, B papers are also organized around a coherent argument, with a structure based on unified paragraphs and clearly delineated sections with clear, clean writing.

A C paper is one that is weak in two areas (argument, organization, style) or seriously flawed in one, usually style or argument. A C grade shows that you understand the main issues and facts and that you have achieved some success in using these to demonstrate the validity of a central argument. However, receiving a C may signal a need to write with greater precision, to develop ideas more fully, to utilize stronger evidence, and to work on grammar and spelling.

A D paper has multiple problems across the board but displays some germ of skill. Overall it
is unsatisfactory and requires serious attention on the student’s part. The problem may be excessive grammatical and spelling errors, failure to grasp basic themes and facts, or simple carelessness borne of insufficient time to complete the assignment.

An F will be awarded to any paper that is simply below college-level work or is plagiarized.

WRITING GUIDE

Below are guidelines to help you improve your history essay writing skills without having to relearn an English writing manual. Read these guidelines thoroughly before writing your paper.

The Little Things That Add Up to Clear, Concise, Professional Writing:

1) Do not use the first person pronouns- we, I, us. Avoid things like, “I will show that…,” or “We can see…” Similarly, avoid using “you.” The author cannot assume anything about the reader that would warrant the use of that pronoun. Remember too that “we” does not equal “Americans.”

2) Avoid contractions at all times. You may say “don’t” and “can’t” in conversation, but ALWAYS spell it out when writing.

3) Write about past events in the past tense, not the present.

4) Provide citations every time you use information or ideas from another author. If you do not, it is called plagiarism. Although historians use the Chicago Manual of Style, I will accept APA or MLA, so long as you are consistent.

5) Avoid using absolutes. Words such as “always” and “never” are sweeping generalizations and there is a good chance that there is an exception to your rule. Also, avoid “obvious” and its derivatives. If something is obvious, then you have no need to state it.

6) Do not use questions in a paper. You are writing to inform your reader, not to ask the reader questions- even rhetorical questions.

7) I would prefer that you not use “tech report writing” format. Your paragraphs should be indented and there is to be no extra spaces between paragraphs – just like your books looks.

8) Avoid colloquial language, clichés, and slang terms. You are writing a paper, not graffiti.

9) Learn punctuation, especially the use of commas and semicolons. They are not arbitrary marks to be used at whim.

10) Learn the difference between “there” and “their.” They are not interchangeable. Same goes for “lead” verses “led.”

11) Learn the correct use of apostrophes, especially the difference between “its” and “it’s.” The second is a contraction of “it is,” while the first is the possessive of “it.” In other words, the following is correct: “The United States Navy used its trained crabs to win the war, and it’s a good thing.” Of course, as per rule # 2, you would not use “it’s” in a paper because it is a
contraction.

12) Avoid the passive voice. If you are writing, “would” or “could” you are most likely writing in the passive voice. The active voice makes for a more assertive paper. (See The Elements of Style by William Strunk, Jr. for an excellent explanation of passive and active voice-you can find it on-line if you do not own a copy at: http://www.cc.columbia.edu/acis/bartleby/strunk/)

13) Quotations should be used as evidence to reinforce your points. You should give both a voice to the quote (As the historian Roger Bilstein explained, “….”) and explain in your words the importance of that quote to your reader. Also, end a paragraph in your own words, not someone else’s.

14) Book titles are in italics or underlined. Articles are in “quotation marks.”

15) Think about AUDIENCE. You are not writing directly to me. Your roommate, your spouse, or another college student should understand your paper. Therefore explain, prove and analyze. Saying things such as, “in the textbook…” or “as we learned on the discussion board…” or “as it was said in the Study Guide…” will leave the general reader confused.

16) Above all else, organize beforehand and PROOFREAD afterwards. Silly mistakes easily corrected if proofread greatly take away from a well-argued paper and will lower your grade. So never hand in a first draft.

How to Make Each Part of the Essay Excellent:

A. Introduction. An introduction must give a broad statement that tells the reader the subject of the essay. In addition, a specific thesis must be stated in the introduction telling the reader exactly what the argument is and what evidence will be used. Generalities will not suffice. Be specific and have a point. A good introduction will serve as the outline for your paper. The most common mistakes are to make too general a statement that a five-paragraph essay could not possibly do justice, make too long a list of things that are never covered in the body of the paper, or make an emotional statement but fail to tell the reader on what points you will be relying to convince her of the wisdom of your argument.

B. Body of Paper. The body of the essay should have a separate paragraph that discusses and provides the evidence for each of your examples—one at a time. If the arguments are mixed up the reader will not find your argument compelling. Dedicate one paragraph to each of your examples. Make sure that the body of your essay proves your thesis—that each example is clearly linked to your thesis and that the entire thesis described in your introduction is covered fully in the body of the paper. The body of the essay also needs to be organized. That is each paragraph should follow a logical pattern developing your thesis and the information within the paragraphs needs to follow a logical order.

C. Paragraph Length. Be wary of very short (two sentences) or very long (half page or more) paragraphs. It is important that each new idea has its own paragraph with a topic sentence, one or
two sentences of argument with a quote from a source as evidence, and a transition sentence to the next paragraph.

D. Transition Sentences. A good transition will guide your reader out of one paragraph and into the next by signaling the next argument you will discuss in detail in the next paragraph. Transition sentences are the glue that holds the reader’s attention as you develop your thesis. Without good transitions your style, and ultimately your argument, will appear choppy and confused.

E. Evidence. Provide quoted evidence from the assigned sources to convince the reader with the authority of participants in the events or experts on the subject. An argument without evidence is opinion---interesting, but not convincing. Be sure to avoid plagiarism. Plagiarism in papers is also intolerable and grounds for failure and even expulsion as per University policy. As explained in one writing manual:
Your research paper is collaboration between you and your sources. To be fair and ethical, you must acknowledge your debt to the writers of these sources. If you don’t, you are guilty of plagiarism, a serious academic offense. Three different acts are considered plagiarism: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words.

If you are unsure what plagiarism is or how to avoid it, see me before you turn in a paper.

F. Conclusion. The conclusion of an essay should sum up your main points and convince the reader that any reasonable person would be persuaded by your logic and evidence. It should not be a sentence or two that says that you are done, nor should it introduce any new ideas. It should remind the reader of your position on the question, sum up your main points and finish with an appeal to the reader’s logic.
The research assignment for this class will be satisfied by your participation in the Pop-Up Museum project in Cooley Ballroom on Tuesday, April 16th.

The concept of a Pop-Up Museum has emerged in popularity over the last decade. The idea is to “pop up” in a public area and to bring ideas (in this case historical ideas and presentations) to an audience that did not necessarily think they were going to a museum that day. Instead, the museum “pops up” and comes to them...in a way that they conveniently drop by, stroll through, talk to exhibitors and then go on about their day. The goal is to bring awareness to your team’s wonderful work this semester and to bring awareness to the History department and classes at Poly. Since the “theme” of this campus is “MAKE,” and the emphasis is on applied knowledge, this event celebrates and embraces the spirit of Poly.

Logistics: We can enter Cooley for set up at 8:30am and your team must be ready by 9am. Someone from the team must be at your exhibit throughout the day. If there is a problem with that, let me know and we will figure something out. Break down will start at 2:30pm. Your team can decide time slots for manning your own exhibit. If you will need a verification letter to ask for an excused absence, let me know. If your other professors will not grant you an excused absence, then you should work out with your group members a suitable solution.

Groups will be of 3-4 people. All groups must have at least three people. With fewer than three, if someone withdraws from class, a student could be left alone on a project. Groups of five are often just too big and work delegation becomes problematic.

Assigning groups: I will assign groups.

Deciding the topic: Your group’s topic is completely the choice of the group and group topics should be finalized no later than January 29. The group must bring in their final topic to class that day. The topic must be within the timeframe of the class and topical. Groups are required to present their topic aloud to the class and the class can offer feedback.

Most any topic works. Music, art, politics, social and cultural topics, political and military history all work to name just a few. Just as with a written paper, you want to be sure you do not choose something way too big to work with and instead narrow that topic to a do-able visual presentation.

Use your imagination and creativity in deciding how you think your team’s topic can be best presented visually. In addition to excellent content you also want to draw visitors to your exhibit so the use of color, design and other visual elements will be very helpful to your group’s goals.

Presenting Project to the class for evaluation: Each group will benefit from feedback. As such, on February 21 each team will share aloud their display. At this point you ought to know how the display will look – the 3D element or interactive element.

In addition to sharing the display concepts, each group will hand in a bibliography containing no fewer than five primary sources and six secondary sources. Each source must be annotated.
**Class Update:** Each team must present an update to the entire class on March 21. The update is to include specifics as to what the display will look like and how much of it is completed and what each team member is working on, assuming the work load has been divided among the team members.

**Day of the Museum:** Dr. Adams will visit each exhibit and the group member(s) will explain their work and I will ask questions. I will be evaluating the team on the visual appeal of the exhibit as well as the content offered by both the exhibit and team member(s).

**Peer Evaluation:** Each team member must turn in an evaluation on their teammates. This is confidential and at no time will your fellow teammates know how they were scored by their teammates. I will be using that data to calculate the final grade. THESE WILL BE DUE no later than THURSDAY, April 18th – **after** the actual exhibit day.

All the above elements are part of your final grade for the pop-up exhibit portion.

**Paper Assignment:** This is to be a clearly argued **five-page essay**, crafted around a strong and clear thesis, on some specific aspect of the topic your group studied. You will utilize the resources, such as the annotated bibliography, that the group assembled, but you may need to conduct additional research. **Primary sources must be used, just like a practicing historian.** THIS IS DUE AT THE POP-UP MUSEUM. You will also have to upload it into SafeAssign in Bb. These are INDIVIDUAL PAPERS – not a group paper. Every person is writing their own paper.
TWO SIDES OF THE MOON

DAVID SCOTT
ALEXEI LEONOV

OUR STORY OF THE COLD WAR SPACE RACE

Foreword by NEIL ARMSTRONG
Introduction by TOM HANKS
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"A very valuable account of the way the Cold War was ended in space."
—SIR ARTHUR C. CLARKE, author of 2001: A Space Odyssey

"Dave Scott and Alexei Leonov have each borne the enormous responsibility of commanding spacecraft and of representing their respective countries in the most fascinating and most expensive race in human history. This is their transcendent recounting of that competition."
—NEIL ARMSTRONG, from the Foreword

"Leonov and Scott have gone to extra lengths to explain the inexplicable in Two Sides of the Moon. And thank goodness they have. Theirs was a gamble taken voluntarily and eagerly with the single-minded pursuit of earning the assignment and then getting the job done. Sometimes they were first. Often they were best. Always they were colorful. And yet each time they returned, neither man claimed to have come back a changed man who had gone into space and seen the spirit of the universe. They came back from their missions in space having seen the spirit of themselves as even more of the human beings they were before leaving our world of air, land, and water.... Leonov, the artist, and Scott, the engineer/dreamer.

The two of them—the Cheaters of Death."
—TOM HANKS, from the Introduction

"What was most significant about the lunar voyage was not that men set foot on the moon, but that they set eye on the Earth."
—NORMAN COUSINS
WAR IN THE AIR

True Accounts of the 20th Century’s Most Dramatic Air Battles—by the Men Who Fought Them

STEPHEN COONTS
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“The Doolittle Raid” from Thirty Seconds Over Tokyo by Ted W. Lawson 77

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“Saved for Another Day” from A Proud American by Joe Foss with Donna Wild Foss 109

“Target: Hong Kong” from God Is My Copilot by Robert L. Scott, Jr. 125
To receive notice of other books and new books by Selz Shumway,

—New York Times Book Review

"An exhilarating exploration of the dimensions of history and mythology"—Boston Globe

Presents the reader back in the early modern...
This is a sample of the materials that I either assign students to read, or that I teach in class. Only the first pages are copied. Happy to send the entire articles too.

Valerie

P.S.
I use sources/ readings on U.S. history too, but didn't include those since it is a "6" v. "7" request.
Appendix

We encourage readers to try different uses of the Patent Co-Inventor Network Visualization Tool. For example, you might try all patents in a specific sub-class over time, or re-create our own efforts. It is impossible to isolate every variable and satisfy every possible objection in a Journal format, but one value of such tools is their relatively quick and easy reproducibility.

TechFlow uses the LASSO (Least Absolute Shrinkage and Selection Operator) method to generate a set of words characterizing each patent, which devalues common words like “the” and “and” in favor of differentiating terms like “doping” or “dielectric.” Starting from the top tags for a chosen, central patent, it finds the 100 patents with the most similar tags, on the premise that similar tags will describe similar technologies. It arrays these patents on the image into clusters of especially similar word usage, which are represented on the image by gray bars. It then stretches the clusters out chronologically from left to right, 1975 to 2010. Overall similarity and difference among the clusters determines vertical spacing. The most popular tags are the words along the edge, with lines for each illustrating this word’s usage.

Blue Skies into White Space

Southern African Responses to the Trans-African Flight of the Silver Queen, 1920

TILMAN DEDERING

ABSTRACT: The first trans-African flight from London to Cape Town in 1920 was feted by white observers as a major achievement in consolidating the links between South Africa and the British Empire. Probing the comments made by black and white contemporary observers on the meaning of the flight, this article explores the cultural and political connotations of aviation in a colonial and imperial setting. It emphasizes that the celebration of the superiority of Western technology as a tool in the consolidation of white minority rule was marked by white anxieties about African disobedience. The public responses to the flight of the Silver Queen also reverberated with the debates between Afrikaners and British South Africans about the shaping of a white South African identity. Nationalist Afrikaners hesitated to welcome the flight because it was viewed as a symbol of closer connections with the Empire. Cultural differences and political conflicts, not only between whites and blacks but also within the white settler society, influenced the public discourse about technological progress.

Introduction

From the beginning of the development of aeronautics, the popular trope of the “conquest of the air” resonated with fantasies of unfettered political power and military might. The literature on the history of aviation is studded with references to the phenomenon of empire, alluding to the multi-faceted links between aviation and forms of political and cultural power that seek to project their dynamism through transboundary mobility. Drawing from the growing scholarship on the history of aviation in a

Tilman Dederer is professor in the Department of History at the University of South Africa, Pretoria. He wishes to acknowledge the support from the South African National Research Foundation. He is very grateful to the anonymous TdC reviewers for their careful comments and criticisms and to Alex Mouton for providing collegial support.

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0040-165X/18/5902-0004/289-312

1. Louis Mouillard, L'empire de l'air; Russell Naughton, Hargrave—Aviation and Aeromodelling. See also the recently republished aerial science fiction books by the
The Flying Boats: Pioneering Days to South America
Author(s): Kenneth Gaulin
Source: The Journal of Decorative and Propaganda Arts, Vol. 15, Transportation Theme Issue (Winter - Spring, 1990), pp. 78-95
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Around the World in 20 DAYS

By NADYA LABI

IN THE NOVEL AROUND THE WORLD IN EIGHTY DAYS, Phileas Fogg employed all manner of transport—steamers, railways, yachts, carriages, trading vessels, sledges and even elephants. But no balloon. It was Hollywood, not Jules Verne, that sent the intrepid Brit off in that aircraft. Trivia, you say? But there was nothing trivial about the real-life fulfillment of what seemed to be quixotic fantasy last week in Northern Africa. In a 160-ft-high balloon, a silvery daredevil in the air, two adventurers—Swiss psychiatrist Bertrand Piccard, 41, and British balloon instructor Brian Jones, 51—completed their tour of the world in 20 days. The stakes were different (a purse of $1 million, courtesy of Anheuser-Busch, as opposed to £20,000 in Verne), but their intent was the same. They sought to prove a point—to themselves and the world.

The Breitling Orbiter 3 crossed the finish line (9.27° west longitude) over Mauritania last Saturday. Piccard was ecstatic. “I am with the angels and just completely happy,” he said over satellite relay. Jones, for his part, said calmly, “I am going to have a cup of tea, like any good Englishman.” They had sailed into history. And they decided to sail on a little more. “We do not land. We go to Egypt,” Piccard radioed air-traffic control in Senegal. “We are a balloon flying around the world.” They touched down in Egypt on Sunday morning. “I will be tearing their eyes out when I see them,” their erstwhile rival Richard Branson, founder of Virgin Atlantic, told TIME. “But apart from that, I think a hug and a bottle of champagne will be appropriate.”

Since 1981 there have been nearly 20 attempts to circumnavigate the globe in a balloon. Steve Fossett, a Chicago millionaire who attempted the feat five times, plunged into the Coral Sea after traveling 14,236 miles last August. And on Christmas Day he went down again near the coast of Hawaii, taking along his partners, Per Lindstrand of Sweden and Branson. The U.S. Coast Guard fished them out at a cost—to taxpayers—of about $300,000. Setting the elusive record was worth the trouble to Fossett. “I can’t tell you how it ranks with the others, like climbing Mount Everest or making the first transatlantic airplane flight,” said Fossett. “But it’s one of the great explorations.”

It’s tough for pioneers to make a name for themselves these days. Both poles have been reached, the Atlantic has been crossed and recrossed, and the eagle has landed. So why not do it in a balloon? Well, what can you say about a pastime whose first passengers were, in an experiment by the French Montgolfier brothers in 1783, a duck, a rooster and a sheep? No wonder Piccard has a complex. “The way the public sees it is this,” he explained before lift-off. “If we don’t leave, we are idiots. If we do leave but don’t succeed in our mission, we are incompetent. But if we do succeed, it’s because it was easy and anyone could have done it.”

But you see, the psychiatrist has a legacy to uphold: his grandfather Auguste was the first to reach the stratosphere in a balloon, and his father Jacques dove to the deepest point of the ocean in a bathyscape. “Bertrand believes it is his destiny to fly a balloon around the world,” said his rival Andy Elson, as the Orbiter 3 pushed the world record further and further.
The Last Samurai
from Samurai!

by Saburo Sakai with Martin Caidin
and Fred Saito

Saburo Sakai was the highest-scoring Japanese ace to survive World War II. In 1957 Sakai collaborated with American aviation writer Martin Caidin and Japanese journalist Fred Saito to write his autobiography, Samurai—one of the few truly great aviation books to come out of World War II.

Sakai had been credited with fifty-seven victories against Allied planes (he would end the war credited with sixty-four kills) when he flew a Zero south from Rabaul on August 1, 1942, to contest the American landing on Guadalcanal. Twenty-seven Betty bombers and seventeen Zeros made the 550-nautical-mile trip south.

After shooting down a Wildcat and a Dauntless, Sakai closed relentlessly on the rear of a formation of eight American planes that he thought were F4F-4 Wildcat fighters. He was wrong. The planes were SBD Dauntless dive bombers, and they all contained rear gunners, each armed with twin .30-caliber machine guns.

A frightened Sakai realized his mistake when he was about fifty yards behind his intended victim and closing rapidly. Too late! At a range of less than a hundred feet Sakai squeezed the trigger of his guns, just as the Dauntless gunners opened fire.

Bullets ripped into the Zero’s cockpit, and two smashed obliquely into Sakai’s skull. Permanently blinded in his right eye, temporarily paralyzed on one side, Sakai somehow managed to fly his fighter the 550 nautical miles back to Rabaul.

Two years later, with the tide of war inexorably running against Japan, the now one-eyed fighter pilot was once again allowed to fly a Zero. This time he flew from Iwo Jima. We join him now, for the first time, he meets Hellcats aloft.

On June 24 the quiet lull which had settled over Iwo Jima disappeared. It was about 5:20 A.M. when the air-raid alarms set up a terrific din across the island. Early-warning radar had caught several large groups of enemy aircraft less than sixty miles to the south—and coming in fast.

Every fighter plane on the island—more than eighty Zeros—thundered down the two runways and sped into the air. Mechanics dragged the remaining Betys and Jills to shelter.

This was it! The long wait was about to be rewarded. I had a Zero under my hands again, and in another few moments I would know—by the acid test of actual combat—if I had lost my skill.

An overcast at 13,000 feet hung in the sky. The fighters divided into two groups, forty Zeros climbing above the cloud layer, and the other forty—my group—remaining below.

No sooner had I eased out of my climb than an enemy fighter spun wildly through the clouds, trailing a long plume of flame and black smoke. I had only a brief look at the fighter—it was a new type, unmistakable
The news of this incident hit me with soul-shaking impact. "Please tell Wright I'll wait for him in the ship," I said. I left the building where the briefing was going on and wandered through the desert darkness the mile or so out to where our plane was parked. I crawled into it and curled up on the flight deck. I don't think I really went to sleep. I think I sank into a kind of morose stupor.

When next I remembered anything, we were winging our way out over the ocean. Someone had thrown an Army blanket over me. I could hear the drone of the engines and the noise of the radio man at my feet pecking out his message to Casablanca Radio hundreds of miles to the rear. And I could see a star out the little bit of window visible from where I lay.

The Runner
from Stuka Pilot

by Hans Ulrich Rudel

The most decorated German soldier of World War II was Hans Ulrich Rudel, who somehow survived six extraordinary years of air combat. He spent most of his career flying Stuka dive bombers, lost a leg, then returned to flying status and finished the war in an FW-190. Rudel's 2,530 combat sorties is a record you can set in concrete—no one will ever surpass it.

How did he survive six years of combat? Well, he was very lucky. In addition, he was a damn good pilot and an extremely tough, determined man. Perhaps his iron will was the critical factor. Here is one of his adventures.

On 20 March 1944, after seven sorties in the Nikolayev and Balta area, I take off with my squadron on the eighth of the day, our first mission for five days against the bridge at Jampol. The sky is a brilliant blue and it can be taken for granted that after this prolonged respite the defense will have been considerably strengthened by flak and fighter protection.

As my airfield and Rauchowka itself is a quagmire,
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There I was, on the runway at Beale AFB, California, at three o’clock in the morning on October 31, 1984, sitting in the cockpit of an SR-71 Blackbird about to launch on a highly classified reconnaissance mission to Central America. Earlier in October, analysts pieced together various bits of information which led them to believe that the Bulgarian freighter Bakuriani was carrying a number of crates containing Soviet MiG-21 fighter aircraft. During her transatlantic trip from a Soviet seaport in the Black Sea, the Bakuriani was continuously tracked. At first it appeared the Bakuriani was heading for Cuba; however, an SR-71 “Giant Clipper” mission that my reconnaissance systems officer (RSO) and I flew on October 26 discovered that the freighter had altered its course and was now sailing around Cape Horn to a destination unknown.

How did I get here? An average kid from central New York who grew up fascinated by aviation, about to venture off on a critical Cold War mission in the world’s most provocative aircraft. The answers to that question go in different directions, but the most important vector points towards the aircraft, a product of American innovation.

About 150 hand-selected engineers in Clarence “Kelly” Johnson’s Skunk Works division of Lockheed designed the SR-71 Blackbird in the early 1960s. As Kelly said during an American Institute of Aeronautics and Astronautics ceremony:

“I believe I can truly say that everything on the aircraft, from rivets to fluids, up through materials and power plants had to be invented from scratch.”

What I find amazing is Lockheed was given the contract to develop the A-12 (predecessor to the SR-71) in 1959, and the first flight of the A-12 occurred on April 26, 1962, less than three years from contract award to first flight.

To a pilot, the SR-71 flies in two different domains, one physical and the other cerebral. At subsonic speeds the SR-71 flew like a heavyweight, fighter-class aircraft without the use of flaps. Takeoff was a real rocket ride, and it happened fast. The pilot needed to retract the landing gear immediately to prevent an over-speed, and the nose was pulled up to about 18 degrees. The pilot then had to come out of afterburners, level off at 25,000 feet, and start air refueling with a KC-135Q about 10 to 15 minutes after takeoff. Air refueling was one of the most challenging pilot tasks, especially because of the limited forward visibility and flexible fuselage. Additionally, when most of the fuel was on-loaded, the angle of attack was so high that the aircraft did not have enough thrust to keep up with the tanker without lighting an afterburner. Put all these conditions together at night—in a thunderstorm—and air refueling would become very interesting.

After filling the tanks with about 80,000 pounds of JP-7 fuel, we accelerated through the Mach numbers in a climb, and typically leveled off around 80,000 feet.
“Great Shadow in the Sky”

*The Airplane in the Tulsa Race Riot of 1921 and the Development of African American Visions of Aviation, 1921–1926*

JILL D. SNIDER

Soon after daybreak on Wednesday, June 1, 1921, a shrill whistle pierced the morning air hanging like a damp curtain over Tulsa, Oklahoma. The sharp, sudden blast shot fear through the hearts of Tulsa’s black citizens, who, after enduring a night of racial violence, felt they were hearing the call-to-arms of the enemy. Moments later, their worst imaginings materializing before their eyes, residents spotted fires engulfing the southern rim of Greenwood, their segregated quarter tucked into the city’s northeastern corner. Huge orange-blue flames snapped and lurched erratically as billows of thick, dark smoke roiled upward, choking the air, and snakelike strands of fire curled toward Greenwood’s residential area, forcing people to flee for their lives. Panicced men and women, some leading frightened children or supporting feeble parents, began pouring into the streets and alleys of Greenwood.1

What they met as they abandoned their threatened homes made their blood run cold. All around them sang bullets delivered from the staccato firing of a machine gun mounted on a hilltop overlooking “Little Africa,” as whites referred to the segregated section. Tulsa policemen, aided by over five hundred newly sworn white deputies, many volunteers from a lynch mob that had gathered the night before, herded black citizens into small groups. Waving guns in their faces, they ordered their captives to march, some only partially clad, to makeshift detention centers (formerly a baseball park and a convention hall), while overhead, to the horror of many, six airplanes dove and looped in large circles above Greenwood. It was as if, one fleeing woman observed, they were “great birds of prey watching for a victim.”

This early morning invasion of Greenwood, which witnessed the airplane’s first known appearance in a racially motivated attack on American soil, had been sparked early on the previous evening by a thwarted lynching. When close to forty armed Greenwood residents had arrived at the County Courthouse to defend a black teenager against a white mob of nearly fifteen hundred, the stage was set for what would later be remembered by many as the “Tulsa Race War of 1921.” The riot that ensued raged out of control for over six hours, and it con-
William Stadlem

The Romance in Aviation's Glory Years

The People, the Plane, the Chamou, and

Jet Set

They read excerpts from this book —

explore books at the

market.
From the Spirit of St. Louis to the SST: Charles Lindbergh, Technology, and Environment

LEONARD S. REICH

In June 1970, forty-three years after he completed the transatlantic flight that made him an international hero and symbol of American technological prowess, Charles A. Lindbergh (1902–74) penned a letter on what he viewed as the central challenge to Western civilization. Unable to testify personally before Congressman Emilio Daddario's House Subcommittee on National Science Policy because he was then in the Philippines working to save endangered wildlife, Lindbergh wrote for the record, "The very survival of our civilization, if not that of mankind, depends on our ability to foresee and control the fantastic forces of the various technologies our scientific knowledge has released. . . . Much as I believe in the utmost practical freedom and independence for man, I do not see how his essential environment can be maintained in this technological era through commercial organizations acting independently. . . . The survival of Western civilization is likely to depend on how intelligently we apply its sciences and technology to our human environment within the next decade."¹

To an American citizenry that had observed the first Earth Day two months earlier and was then in the midst of a bitter struggle over technological warfare in Southeast Asia, such rhetoric was little cause for surprise. Yet for those old enough to remember Lindbergh's 1927 triumph and aware of the decades during which he actively and effec-

Dr. Reich teaches management and the history of technology at Colby College and is writing a series of articles about changing attitudes toward technology and progress during the 20th century. He wishes to thank Susan Kenney, Reeve Lindbergh, Jon Lindbergh, Richard Logan, Chuck Lakin, and Judy Schiff for their assistance and Robert Rosenberg, Robert Kargon, James Fleming, Robert Friedel, Howard Segal, and Robert Weisbrot for their helpful comments.


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CHAPTER TWO

MILITARY APPLICATIONS OF THE BALLOON
19TH CENTURIES, EUROPE AND AMERICA, AND THE EARLY

THE GREAT BALLOON ADVENTURES OF THE LATE 19TH AND

COMES OF AGE

THE NEWBORN BABE
chute harness and jacket to expose his mangled shoulder. Kingsley managed to slow the bleeding. But the gunner had already lost too much blood; 500 miles from base, Sullivan was going into shock.

Then even more 109s arrived. During the course of a prolonged gunfight they shot the Fortress to tatters, forcing Anderson to ring the bailout bell. In the resulting confusion, Sullivan’s chute harness could not be found. Kingsley didn’t hesitate. He removed his own harness and fitted it on the gunner. Sullivan later related: “Lieutenant Kingsley took me in his arms and struggled to the bomb bay, where he told me to keep my hand on the ripcord and said to pull it when I was clear of the ship. Before I jumped, I looked up at him and the look on his face was firm and solemn. He must have known what was coming because there was no fear in his eyes at all.”

Dangling in their chutes, the crewmen watched their bomber fall to earth and burn in Bulgaria. The fliers were soon taken prisoner, and their captors later said they had found a dead airman on the crashed flight deck, perhaps having attempted a crash landing. Ten months later the Kingsley family received David’s Medal of Honor.

The 97th group lost three more aircraft that day, while the Fifteenth wrote off five other bombers and four fighters. It was one more tragic entry in the prolonged campaign to turn off the spigot of Adolf Hitler’s Balkan oil.

POST TIDAL WAVE

In April 1944, the Fifteenth Air Force had begun a four-month campaign to destroy the petroleum refineries around Ploesti. In fact, the Fifteenth was all about oil at that point: Since Romania lay 1,300 miles from the English bases of the Eighth Air Force, Lt. Gen. Nathan Twining’s command had been established on fields surrounding Foggia, on Italy’s east coast—well within reach of the refineries.

On August 1, 1943, three months before the Fifteenth was organized, Eighth and Ninth air force B-24Ds had flown a historic low-level mission against Ploesti, suffering spectacular losses. Operation Tidal Wave cost 54 of the 178 Liberators destroyed or interned in Turkey—proof that Ploesti would not be eliminated in a single stroke (see “The Truth About Tidal Wave,” March 2012).

Ironically, Ploesti’s first refineries had been built with American backing, but nine decades later Bucharest was allied with Berlin. In addition to the 10 refineries at Ploesti, which produced perhaps one-third of Germany’s oil, there was a wide network of targets like Giurgiu: storage facilities, transportation routes and shipment points. All were interrelated, and all were distant from Italy. From Foggia, Ploesti lay 580 miles to the northeast across the Adriatic.

By the spring of 1944, the U.S. Army Air Forces realized that there was no such thing as a knockout blow when it came to these industrial