United States Navy
vs.
Pembroke College
1942

William T. Generous, Jr.

Naval Communications versus Pembroke College in 1942

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Introduction

Stephen Budansky's book on code-breaking is historically comprehensive, analytically persuasive, and technically impressive – not to say *overwhelming!*[1] Anyone interested in what was perhaps the greatest single reason for the Allied victory in 1945, the deciphering of enemy radio messages, must read it.

Two items in the book especially beguiled me. As a young naval officer in the 1960s, I learned the U. S. Navy's ciphers used before we went to electronic on-line encryption. Those older systems were similar to the Axis ones described by Budansky, so I was curious about how they might be broken.

Perhaps more, though, as a Brown alumnus, I was intrigued by this Budansky remark:

> In late 1941, the Navy approached several of the leading women's colleges to run courses in cryptanalysis, but almost immediately, had to "blacklist" Brown University's Pembroke College for publicizing its contribution to the war effort.[2]

That brief sentence pretty much tells the story. But I was curious about what on earth Alma Mater could have done and what she might have been thinking about, to bring the Navy's wrath down upon College Hill.

Code-Breaking

In the 1930s British intelligence, with essential help from its Polish brethren, had broken the ciphers used by the German "Enigma" machines.[3] By the start of the war, then, London often read German radio messages before the intended Nazi recipients did.[4] At about the same time, the U. S. Army's teams had broken the main Japanese diplomatic cipher.[5] Before Pearl Harbor, the U. S. Navy enjoyed less luck with the Japanese naval codes, but was getting close.[6]

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[1] Stephen Budansky, *Battle of Wits: The Complete Story of Codebreaking in World War II (New York, The Free Press), 2000).*
[2] *Ibid.*, 245.
[3] *Ibid.*, 122-146.
[4] *Ibid,* 147-148.
[5] *Ibid.*, 5-6, 164-168.
[6] *Ibid.*, 7-9.

A triangle of mutual distrust confounded the two American services and the British.[7] Only reluctant and resentful cooperation existed among these super-secretive code-breakers.[8] Their obsession with security would be at the center of Pembroke College's mistake in 1942, as we shall see.

The break-through in Anglo-American relations occurred at Argentia, Newfoundland. There, on August 12, 1941, President Franklin Roosevelt and Prime Minister Winston Churchill articulated the "Atlantic Charter" as a mutual war aim, even though the United States was still officially neutral.[9] Within days of this crafting of the great Anglo-American Alliance, British and American intelligence officials were sharing their deciphering successes and difficulties.[10]

When U. S. Navy officers discovered that they now had to deal with the German Enigma, broken by the British, and the Japanese Purple, broken by the U. S. Army, they knew they had a great new need for personnel. Their code-breaking operation was a subsection of the Office of the Chief of Naval Operations, numbered "OP-20-GR." Its name was the disingenuous "Research and Training Sub-Section of the Radio Intelligence Section of the Division of Naval Communications."[11] The nomenclature was intended to disguise the unit's true nature, deciphering. But its work became so voluminous that part of its difficulty with the Japanese naval codes was the lack of man-power. Even in 1941, with the peace-time draft in full-swing, OP-20-GR spent so much time finding and teaching new men that an office joke said it should be called "*Recruiting* and Training."[12] Something had to be done to get skillful people in greater numbers.

1 nat Research

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[7] *Ibid.*, 173-174, 191.

[8] *Ibid.*, 208.

[9] *Ibid.*, Thomas A. Bailey, *A Diplomatic History of the American People*, 7th Ed. (New York: Appleton-Century-Crofts, 1958_, 729; Thomas Parris (ed.), *The Simon and Schuster Encyclopedia of World War II* (New York: Simon & Schuster, 1978), 35.

[10] Budansky, 208.

[11] "A Historical Review of the Progress and Accomplishments of OP-20-GR" (1 January 1941 to 31 December 1943), 1, in RG 3B, Box 113, National Archives, College Park MD. Thanks again to Budansky for citing this source.

[12] *Ibid.*, 2.

Recruiting Women

That something was to marshal woman-power. Before the war, OP-20-GR cultivated a small number of important "contacts" on college campuses. Professors of mathematics and related disciplines often served as consultants to the deciphering. They would recommend certain of their students for such duties. At first they were all men, of course.[13] Before Argentia, and more so afterwards, man-power was short because men were needed in so many other places.[14] Two of the Navy's contacts, Swarthmore College President John W. Nason, and William Martin Blanchard at DePauw University, suggested that America's women's colleges be invited to help.[15]

OP-20-GR learned that a conference of some of the top American women's colleges was going to meet on Friday and Saturday, October 31 and November 1, 1941. The seven colleges were Barnard, Bryn Mawr, Mount Holyoke, Radcliffe, Smith, Wellesley and Vassar. These schools were often unofficially called "The Seven Sisters," and their conferences were usually about issues in women's education, such as curriculum offerings, cooperative ventures, and the like.[16] About a month before that Halloween meeting, Rear Admiral Leigh Noyes, the Director of Naval Communications, wrote to President Ada Comstock of Radcliffe College in Cambridge, Massachusetts. He hoped that she, an acknowledged leader among the Seven Sisters, might discuss with her colleagues a proposal to create a course in cryptanalysis at those schools.[17]

Exactly what happened at the conference cannot be determined with precision, no doubt because the Navy's security concerns prohibited record-keeping. OP-20-GR's own history says only that "President Comstock readily agreed to begin the course at Radcliffe and to outline the proposal to the authorities of the other" colleges.[18] We can infer that Noyes made his proposal to her, perhaps in his letter, but certainly before the Seven Sisters met. If the colleges agreed to teach basic cryptanalysis, their graduates could help the Navy in its deciphering work. Surviving records of the conference itself are silent on the issue, again probably for reasons of security.[19]

Most of the colleges jumped at the opportunity. Indeed, several had already created other offerings to help their students prepare for possible roles should the

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[13] "A Historical Review," Annex B, October 29, 1942, 2.
[14] "An Historical Review," 2. This source is not in the Annex cited in the previous footnote.
[15] *Ibid.*
[16] "Seven Colleges Conference, 1941," IDB3m Box 72, Bryn Mawr College Archives.
[17] "A Historical Review," 2.
[18] *Ibid.*
[19] "Seven Colleges Conference, 1941."

United States enter the wars then engulfing both Europe and Asia, and threatening the Western Hemisphere, as well. Bryn Mawr College's activity was typical. As its President Marion Park reported to the 1941 Seven Colleges conference, her college had already altered its curriculum for the war effort. Biology courses were now studying blood typing and nutrition; the geology department offered aerial photography, surveying and contour mapping; physics had weather forecasting; and an economics professor taught wartime price controls. [20] Most of the other colleges were doing likewise.[21]

Bryn Mawr and the others already active in war-related curricula were probably acting in response to the decision taken by the Seven Sisters a year earlier at their 1940 conference when they created committees to decide what the member schools could do in the war-time emergency.[22] Because the agenda for the Halloween 1941 conference, when President Comstock would relay Admiral Noyes' proposal, included a discussion of adapting courses to "Problems Arising from the War," the officials of the seven schools were surely open to the Navy's idea.[23]

Exactly how the proposal was made or accepted cannot be known, again because of the Navy's penchant for secrecy. Naval records contain nothing contemporaneous with the October 1941 meeting, only an historical summary written after the war.[24] Nor is there anything in the archives at Pembroke or Bryn Mawr. An obsession with security was perfectly understandable because both the British and the Americans knew what excruciating labor it had taken to break so much of the Axis cipher systems.[25] That the Allies *had actually done so* may have also pushed them to deep secrecy since they must have realized that what they had done to the enemy ciphers could be done by the enemy to theirs, as well. Moreover, their work would be undone if the enemies made a few easy changes in their own procedure, should they learn about the deciphering successes.[26]

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[20] "Bryn Mawr College and the National Emergency," IDB3, Box 72, Bryn Mawr College Archives.

[21] E.g., Barnard, *New York Times* (Oct. 6, 1961), 14:7 and *ibid.*, (Oct. 21, 1941), 15:3; Mt. Holyoke *ibid.*, (Aug 3, 1941), II, 4:3; Smith, ibid.(No. 9, 1941), 6:3; and Wellesley, ibid. (Jan. 19, 1941), II, 5:4.

[22] Harriett M. Allyn, Academic Dean, Mt. Holyoke College, letter (Sep. 20, 1941) to Pres. Marion E. Park, Bryn Mawr College. IDB3, Box 72, Bryn Mawr College Archives.

[23] *Ibid.*

[24] Namely "A Historical Review," cited above.

[25] See, for just a few examples, Budansky, 62-86, 93-110, 122-146.

[26] Only a week before the Battle of Midway in 1942, the Japanese made such a change, throwing American code-breakers into a tizzy for several weeks, but coming too late to alter the advantage the underdog U. S. Fleet enjoyed for that crucial battle. *Ibid.*, 257-258.

Secrecy Demanded

As a result, when the cryptanalysis courses were proposed to the women's colleges, the Navy demanded tight security. College officials were advised that "[b]right, active, *close-mouthed,* congenial students are desired."[27] Students would be selected by the colleges "on the basis of certain qualifications of ability, availability and loyalty (including secrecy)."[28] Selectees would have to take a "Secrecy Oath," and were given a document called "Introduction for Students," which warned that the cryptanalysis course was more secret than probably anything they had ever run across before. The Navy ordered the students not to reveal the techniques of code-breaking, but even *more.* They were directed not to reveal that they were *taking* such a course.

The third paragraph of this directive read:

> Your instructor has a pamphlet, "Notes on Communications Security." This is most important and should be read at the first meeting of the class. Although you are studying cryptanalysis, we cannot allow this [fact] to be generally known, nor ever published under any conditions.... "Cryptanalysis," "intelligence" or "security" are words which must not be used outside of your own study group. Do not let them leak into any newspapers or publications of any kind[29]

Outside of their class, the students were not even to *say* the *words!* The next paragraph gave the college women a helpful tip:

> Perhaps the safest attitude for you to take is that you are studying Naval Communications in general – the preparation, routing and handling of Naval message traffic. This is a large and important branch of the Navy, you know, since there are no commercial telephone or telegraphic companies to do it for us.[30]

The document went on in the same vein for almost the length of a page. It concluded with a prediction that should the United States ever become involved in an all-out war,"

> Women will be needed and you would be already trained. We do not know whether you might serve as trusted civilian employees of the Navy Department or whether some special branch would be created. At any rate, it would be on a salary basis.[31]

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[27] "GUIDE FOR INSTRUCTORS," 1, OP-20-GR, Naval Communications Course, 10-1-41, Bryn Mawr College Archives. Emphasis added.
[28] *Ibid.*
[29] *Ibid.*
[30] *Ibid.*
[31] *Ibid.*

The copy of these instructions which the author has seen is dated October 1, 1941, and labeled "tentative." It may have been an early draft of what the Navy intended, but since the Bryn Mawr College Archives preserved it, it was no doubt what the Navy actually gave to Bryn Mawr, and probably the other colleges, too.[32] In short, while the Navy hoped these excellent colleges could provide intelligent and trained *women* who would fill the *man*power gap then existing in the code-breaking program, it would insist on *secrecy.*

Pembroke Joins

A hitch quickly appeared when Vassar College, the Poughkeepsie NY "Sister," reported to the Navy that it was "not able to undertake the project." Its place would ultimately be taken by Goucher College, near Baltimore.[33] But not right away. Before Goucher was finally invited, Pembroke College, the women's college in Brown University in Providence RI, was named to substitute for Vassar.

Pembroke had been created by Brown in 1891. For nearly forty years it was "The Women's College in Brown University," a parallel to "The College in Brown University," the official name of the men's school. The two shared faculty, so that from the beginning upper-level classes were open to both sexes, and single-sex classes were entirely gone after World War II.[34] In the 1929s, after she became the Dean of the [Women's] College, Margaret Shove Morris worked to persuade University officials to change the name to "Pembroke," to emphasize the identity of the women's college. Dean Morris hoped to make her school nationally known. Radcliffe and Barnard, the two other women's colleges associated with what are now known as the Ivy League universities, namely Harvard and Columbia, had unique names. Morris must have believed, therefore, that adopting the name of Roger Williams' college in Cambridge University would help.[35]

But Pembroke was never one of the Seven Sisters, although both Radcliffe and Barnard were. Pembroke officials often bemoaned the greater status the Seven enjoyed, while insisting that it was not deserved.[36] Pembrokers sometimes expressed

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[32] *Ibid.*

[33] A Historical Review," 2.

[34] Polly Watts Kauffman (ed.), *The Search for Equality: Women at Brown University 1891-19911* (Providence, Brown Univ. Press, 1991), 1B

[35] "Margaret Shove Morriss, Dean of Pembroke College, 1923-1950," Morriss file at the Brown University Archives, 2; Grace E. Hawk, *Pembroke College in Brown University: The First Seventy-Five Years, 1891-1966* (Providence: Brown Univ. Press, 1967), 26.

[36] Hawk, 219-220.

frustration that their diplomas were unfairly downgraded by comparison with those of the Sisters.[37] There were some definite status-issues at Pembroke.

Dean Morriss herself had an interesting and perhaps pertinent background. She was born in Baltimore in 1884, received her B.A. from Goucher, and Ph.D in history from Bryn Mawr.[38] She was a life-long Quaker, proud of that pacifist tradition, and mixed about the two world wars fought by the United States during her adulthood. An undoubted patriot, though, she went to France at age 33 to serve with the Y.W.C.A.'s War Work Council over there.[39] On her return, she taught history at Mount Holyoke for a few years, before being named, in 1923, Dean of the Women's College in Brown University.[40] While in that job for 27 years, Morriss held a number of high positions in the world of education, both women's and general.[41]

The Quaker influence on Morriss can be seen in speeches she made as Americans faced a world being conquered by Hitler and the Japanese. At the opening of the 1941-1942 school year, she began her remarks by saying,

> We are not at war, and please God we shall not be, but the impact of a world that is at war is already profoundly affecting our nation and us, as individuals within the state.[42]

She went on to guess that the young women probably felt that the war would never come here. Morriss told them that she had believed as much during America's neutrality in World War I. Now in 1941, Quaker Morriss predicted that "we are ... rather unlikely to go to war ourselves."[43] This guess was highly optimistic since even then American naval vessels were escorting convoys headed for Britain and some of them were about to enter an undeclared shooting war with German U-boats, with bloodshed on both sides. But Morriss was holding on to a traditional hope for her charges in the dangerous world that surrounded them, saying,

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[37] The author heard such complaints during his days at Brown, 1959-1963. That was about the time the movement for co-education there was beginning to gather steam.

[38] " "Margaret Shove Morriss, Dean of Pembroke College," 1.

[39] "Biographical Information on Dean Margaret S. Morriss of Pembroke College in Brown University," a different document in the Morriss file at the Brown University Archives.

[40] American Association of University Women, "Dr. Margaret S. Morriss," Morriss File, Brown University Archives.

[41] Elizabeth Zwick, "The Pembroke Class of 1945: A Wartime Generation of College Women," 20; unpublished honors thesis, Brown University Archives.

[42] Morriss, "President Winston, and members of Pembroke College in Brown University," 1, Morriss file, Brown University Archives. The date of the speech is not given. But its text indicates it was at the opening of school, and because (a) the United States was not at war, but (b) Morriss referred to Brown students who were even then being drafted, it had to have been delivered in 1941, the only year both situations existed.

[43] *Ibid.*, 3.

> It does seem to me that we have all the more chance this year to consider somewhat dispassionately the historic role of women in war time, that of preservers of life and its permanent values, and to fit ourselves to play it worthily.[44]

The Quaker in Dean Morriss came through in her peroration that "Military events have enormous consequences, but civilization does not rise or fall with them."[45] Seventy years later, we know better about World War II, but Morriss's pacifistic hope in September 1941 was clear to those who heard her and to us perhaps more jaded people in the next milennium.

In any case, on December 7 everything changed for most Americans, Margaret Morriss among them. She threw herself into the war effort with impressive energy. For one example, when several national education organizations tried to speed up the graduation of their students so they could enter national service sooner, Morriss showed her leadership skills by persuading Brown to adopt a year-round three-semester schedule at Pembroke.[46] Later she served as a consultant to the Secretary of War.[47] Among her contributions from that post were that she helped to set the standards for recruitment of Women's Army Corps (WAC) officers, and interviewed some of the early WAC candidates.[48]

The precise moment when Pembroke was invited to participate in the cryptanalysis program cannot be determined from surviving records. But the window was small. Admiral Noyes' proposal reached the Seven Sisters on October 31 or November 1, 1941. Only seven weeks later, certainly by December 19, 1941, Pembroke was working to add to its curriculum a course in basis cryptanalysis.[49]

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[44] *Ibid.*. 5.
[45] *Ibid.*, 7.
[46] Zwick, 22.
[47] Margaret Shove Morriss, Dean of Pembroke College,"2.
[48] *Pembroke Record* (July 9, 1942), 3:4/
[49] Morriss, letter (December 19, 1941), to "Dear Undergraduates," File 1-ZP "Pembroke in World War II." Brown Univeristy Archives.

Pembroke's Gaffe

Dean Morriss's energetic support for the war despite her native pacifism may have combined with Pembroke's status anxiety to cause the difficulty the college created for itself in the Navy's code-breaking program.

Along with Brown, Pembroke was proud to be throwing itself into the war effort. On December 15, only a week after Pearl Harbor, Brown issued an "Announcement" that it had created within its academic organization a "Division of National Training." The Division was led by a full professor, Walter B. Hunter, already a member of the Brown Faculty. It would go into effect at the beginning of the next semester in late January 1942. Seven courses from the existing curriculum might be adjusted to fit the war effort, and seven new courses were created specifically for the goal of national defense.[50] This Announcement was apparently intended as a press release, because a few days later it appeared, although not prominently, in the *New York Times* and perhaps other papers.[51] In succeeding weeks, Brown and Pembroke created additional National Training courses and the *Times* reported, also obscurely, on the augmentation, too.[52]

Margaret Morriss let it be known that she was doing what she could to gain victory. Her enthusiasm was clear in the tone of a letter she sent to each of the 563 Pembroke undergraduates on December 19, and she promised to speak to them about the war when they returned to Providence in a couple of weeks.[53]

School re-opened on Monday, January 5, 1942. The weekend in Providence featured an eight-inch snowfall, so probably not all Pembrokers heard Morriss's welcome-back speech.[54] Her remarks that day do not seem to have survived. But they would no doubt have been virtually the same as what she stated in a Pembroke College press release the day before. The news was reported by the local newspaper that very Sunday. Morriss's eagerness to help her country in its time of need was evident.

> Trained women will be more vital than ever before to business and industry and will be needed as soon as possible to take the places of men who have been

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[50] Brown University, "Announcement of National Defense Training Courses," December 15, 1942, File 1=2P, Pembroke World War II, Brown Archives.
[51] *New York Times* (Dec. 17, 1941), 25:1.
[52] *Ibid.* (Jan. 20, 1942), 20:3.
[53] Morriss letter (Dec. 19, 1941), File 1-2P, "Pembroke World War II, Brown Archives. The number of undergraduates is from "Pembroke Her Role TODAY," pamphlet in the same file.
[54] *Providence Journal* (Jan. 4, 1942), 1:1.

> called into the service. Pembroke is indeed fortunate that, through its close connection with Brown University, it is able to adapt its education program easily to achieve this desirable end....[55]

But the Dean was looking at more than "business and industry" for what her graduates would contribute. That same press release stated that seventeen of the nineteen courses in the just-created Division of National Training would be open to women. Some were both named and described.

> Among the courses which are expected to attract the largest number of women enrollees are Clinical Laboratory Techniques, designed to fit students to work in diagnostic laboratories in such fields as sanitation and toxicology, Cryptanalysis, which deals with the elements of coding, decoding and the standard types of cyphers, Russian, Elementary Meteorology, including weather analysis and forecasting, Map Reading and Construction with interpretation of aerial photography and Elementary Statistics.[56]

Please notice: "Cryptanalysis, which deals with the elements of coding, decoding and the standard types of cyphers." One wonders what Margaret Morriss could have been thinking in publicizing that particular course, when the United States Navy prohibited students who were taking it from even *mentioning* its existence, and required that they take an oath to guarantee their commitment to secrecy!

The crypto course was not open to men, proof that it was part of the Navy's program for college women, described above.[57] And yet, despite the secrecy demanded by the Navy, Pembroke tried mightily to get the news out to the general public. The press release went to the *New York Times, New York Herald-Tribune, Boston Advertiser, Boston Globe, Boston Herald, Boston Post,* and to papers in other New England cities, including Bridgeport, Hartford, New Bedford, Portland, Springfield and Worcester. Which of them published the news cannot be determined seventy years later, although *The New York Times* apparently did not.

The Providence Journal, did, though. On an inside page, that Sunday issue had a story of about a dozen paragraphs under the headline "PEMBROKE GIRLS PLAN WAR WORK." It followed the press release almost exactly. In paragraph seven, the *Journal* reported that the courses "expected to attract the largest number of women enrollees" included "Cryptanalysis, which deals with the elements of coding,

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[55] *Ibid.*, 5.
[56] The text of the press release is in File 1-2p, "Pembroke World War II," Brown Archives.
[57] *Brown Daily Herald* (Jan 6, 1942), 1:1.

decoding and the standard types of ciphers."[58] Pembroke had reached the general public about its new code-breaking course.

The campus newspaper, The *Pembroke Record,* published the same information a few days later. A listing of the National Training courses included "Cryptanalysis," followed by the description mentioned in the previous paragraph here.[59]

The *New York Times,* recall, had reported the "Announcement" of December 15, 1941, without the details of the cryptanalysis course. But when Pembroke's personnel sent that Announcement to the *Times,* they provided the course name and number. Although the paper did not publish that information, the course would be known as "National Training 58," an identification repeated in the Pembroke newspaper.[60]

Furthermore, the new course catalog, produced for the beginning of the semester to begin in late January 1942, included the same information. In addition, using the layout common to all college schedules, it told who the teacher would be and on what days and at what times the course would be offered, namely,

> Cryptanalysis. Elements of coding, decoding, and the standards [sic] types of ciphers. MR. GILMAN.
> Open to undergraduates. Group G (9).[61]

Pembroke's transparency about the course spread to the students. The *Pembroke Record* quoted one youngster as saying that "cryptanalysis [is] the most interesting course on the campus. About all we do is decipher codes mostly with a lot of guesswork. It's all like one big happy puzzle."[62]

The Navy Learns

Navy officials had to discover the publicity about the Pembroke cryptanalysis course. Someone in the growing naval community in Rhode Island would have seen the story in the *Journal.* And if some of the other newspapers who got the press release actually published about it, the chances of the news reaching OP-20-GR would increase.

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[58] *Providence Journal* (Jan. 4, 1942), 11:1.
[59] *Pembroke Record* (Jan. 9, 1942), 3:3. Brown Archives.
[60] Brown University, "Announcement of National Defense Training Courses," December 15, 1942, File 1=2P, Pembroke World War II, Brown Archives.
[61] Bulletin of Brown University, Catalogue 1941-1942 (March 1942), 151. Brown Archives.
[62] *Pembroke Record* (Mar. 13, 1942), 4:1. Brown Archives.

But there was more. The era featured many great national newsmagazines: *Life, Saturday Evening Post, Look, Colliers,* and so on, all of which reached millions of readers each week. In one of those magazines appeared a two-page table, that was part of a story by Virginia Hanson which described what college women were doing for the war effort. Down the left of the page were listed thirteen colleges, most of them women-only schools. Pembroke was third on the list, following "Women's College of U. of North Carolina" and "Stanford." Immediately after Pembroke were Smith, Wellesley and Bryn Mawr, three others in the Navy's cryptanalysis training program. There were four columns of data, labeled, respectively, "Course," Principal Emphasis," "Volunteer Activities," and "Specialties de la Maison." In part, the Pembroke entry was this:

College	Courses	Principal Emphasis	Vounteer Activities	Specialties de la Maison
Pembroke	National defense training courses include clinical laboratory techniques, accountting, meteorology, Russian, cryptanalysis, statistics, gunnery, map reading and construction, navigation, application of acoustics to defense, radio.	Etc.	Etc.	Etc.

Pembroke probably reached a national audience with that magazine story. Sad to say, only *probably.* A copy of it resides in the Brown Archives. But it is only a clipping that neither names the magazine nor gives the date. The reader can tell from the reverse that the table appeared on pages 104-105, but nothing else.[63] Exhaustive research in various libraries and archives revealed that the magazine was not *Collier's, Ladies Home Journal, Life, Look, Newsweek, New Yorker, New York Times Magazine, Saturday Evening Post, School and Society,* or *Time.* At least it did not appear in those magazines during the month of January 1942.

If the magazine were prominent, and if it were published that month, it would be the "smoking gun" that would have led the Navy to "blackball" Pembroke and

[63] Undated, uncited picture magazine, 104-105, in File 1-2P, "Pembroke World War II," Brown Archives. Copy in author's possession.

Brown. Pictures embrace the top and the left of the table, two of them from Pembroke. The one on the left looks through the backs of two students at a lecturing professor, probably Ray Edwin Gilman.[64] On the blackboard behind him is a column of five-letter groups, exactly the way the German Enigma enciphered radio messages and an early step in the method the Allies were using to break that same code.[65]

More indiscrete, although probably less prominent than the magazine story, was the photo in a fund-raising pamphlet which was sent out to Pembroke alumnae. The headline says "Pembroke is training her undergraduates to meet the nation's needs for capable women." And one of the six photos on the page shows two students and the same middle-aged professor looking over their shoulders while they work on something off-camera. But on the blackboard behind them is a batch of the same five-letter groups that characterized the German ciphers.[66] Again, these items would be the first step in the Allied code-breaking effort.[67]

Recall, please, that the Navy's rules prohibited students from even saying the word "cryptanalysis."[68] And yet, Pembroke College not only used the word but broadcast to everyone whom it could reach that it was teaching a course in it. Pembroke's photos even suggested a little of how cryptanalysis was done.

The other colleges did no such thing. On the same page in the mystery magazine, Smith, Wellesley and Bryn Mawr did not list cryptanalysis among the things they were doing.[69] There is nothing in the Bryn Mawr Archives about the course taught there, no doubt one of the reasons the Navy regarded Bryn Mawr as a "notable" success in the program.[70] Nor does anything about the cryptanalysis course appear in Bryn Mawr's publications. A six page essay in the 1942 yearbook described how Bryn Mawr's "Defense Courses" were conceived and implemented, but cryptanalysis is not mentioned.[71] Bryn Mawr was so close-mouthed that after the war the Chief of Naval Communications applauded the college's work. Even as late as 1946, he cautioned against publicity. Bryn Mawr's discretion in the matter -- so different from Pembroke's -- was proven by President Katherine McBride's reply. She *asked the*

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[64] His full name is given in Bulletin of Brown University, Catalogue 1941-1942 (March 1942), 58. Brown Archives.
[65] Undated, uncited picture magazine, 104-105, in File 1-2P, "Pembroke World War II," Brown Archives.
[66] "Pembroke: Her Role TODAY," Pamphlet in File 1-2P, "Pembroke World War II," Brown Archives.
[67] Budansky, 76.
[68] Se text above, 5.
[69] Undated, uncited picture magazine, 104-105, in File 1-2P, "Pembroke World War II," Brown Archives.
[70] "A Historical Review," 7.
[71] *Bryn Mawr Yearbook* (1942), Bryn Mawr College Archives, pages are not number, but by author's count, they are 23-28.

Admiral's permission to mention his praise to Bryn Mawr Board of Directors! He graciously said she could do so.[72]

The Big "Why?"

Why would Pembroke have acted so cavalierly? Today's Brown Archives contain nothing on the thinking of officials who made these decisions, so we are left to infer and induce.

One possible explanation is that maybe there were no decisions at all. It could be that the Navy's security rules were never sent to Pembroke when she joined the program later than Bryn Mawr and the other women's colleges. That would be a plausible reason, given that Pembroke seemed blind to those rules. In fact, no trace of those directives survives in the Brown Archives.

It might also be that in a hurry to catch up because of its late entry, Pembroke simply overlooked the rules. Maybe whoever in Providence was supposed to read them just skimmed and gave them no attention. That would be pretty stupid, but would also be a reasonable explanation of the apparent brazenness.

Other possibilities exist. Taken literally, the Navy's rules did not prohibit the colleges from mentioning the courses, just the *students.* Perhaps Pembroke's authorities were so pedantic that they read the rules that way, concluding that *they* were free to mention the course briefly, so long as the *students* were not blabbing about it. That possibility seems so illogical as to be entirely unlikely.

Maybe the course was publicized by *Brown,* and not the women's college. It could be that in boasting about contribution to the war effort, the University noticed the one course not being taken by its men but being offered to the Pembroke women, and that the boasts about it were just thrown in, because no one at *Brown* knew that speaking about it was not allowed. That is also unlikely because the course was described in *so many* Pembroke publications that surely someone in the women's college would have noticed that the Brown authorities were making a mistake. Nor may we forget that Margaret Morriss herself had spoken of cryptanalysis in her December press release.

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[72] Exchange of letters between Admiral Earl E. Strong and President McBride, August 1946, Navy Serial 26919P20, Bryn Mawr College Archives.

Perhaps, and this idea seems quite likely, Pembroke's misbehavior in the matter of security is explained best by its status anxiety, suffered throughout its entire institutional life, 1891-1971. The college was originally a creation of Brown, and Dean Morriss spent a lot of energy during her career trying to attain equality with the men's college.[73] On top of that, Pembroke was not a "member" of the most select sorority of women's colleges, since it never was recognized as one of The Seven Sisters. Those colleges may not have thought of Pembroke as an independent college, as most of them were, although they apparently believed that Radcliffe and Barnard were. The resulting institutional anxiety may have made Margaret Morriss and others around her seek some gain for Pembroke from publicity about its war effort, and the cryptanalysis course may have been thought ideal. After all, only *best* women's colleges had been invited by the Navy, and by publicizing its inclusion, Pembroke was announcing that it was indeed one of the *best.* If this were what happened, we have no records to prove aye or nay. Morriss might not have even considered whether she was barred from mentioning the course.

It is moreover possible that Margaret Morriss overcompensated personally to make sure that no one suspected her, a life-long Quaker, of being opposed to, or even lukewarm about, the war. Nothing in the Morriss papers sheds light on any of her thinking about the matter.

Perhaps the problem was caused by an overenthusiastic underling. After Pearl Harbor, Brown Professor Albert A. Bennett altered his physics course in the Division of National Training to include gunnery.[74] He may have been one of the "contacts" the Navy cultivated during the 1930s. A note in the Navy's history about the blackballing of Pembroke says

> January 1942
>
> 1.17....
>
> 9. Prof. Bennett of Brown seemed to want to take "the bit in his teeth" about the cryptanalysis training for undergraduates. GR objects.[75]

To "take the bit in the teeth," a saying heretofore unknown to the author means "to be uncontrollable, [to] cast off restraint."[76] Although he was not the teacher of the cryptanalysis course being created at Pembroke, Professor Bennett had a leadership role in Brown's war effort.[77] Perhaps he was nevertheless a loose cannon who had

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[73] Hawk, 118, 124-126, 140-149.
[74] *Brown Daily Herald* (Jan. 21, 1942), 1:3.
[75] War Diary, 20-GR, in RG 3B, Box 113, National Archives, College Park MD.
[76] <http://www.thefreedictionary.com/take-the-bit-in-the-teeth.
[77] *Brown Daily Herald* (Jan. 21, 1942), 1:3.

"cast off restraint" in proclaiming Brown's and Pembroke's contributions. But he would have had to be mighty persuasive to align so many higher-ups who would have had to approve of *so many* publications.

Interviewed for this article was a student who was in Pembroke's cryptanalysis course, Devara Poll, the very one quoted by the *Pembroke Record* that "About all we do is decipher codes mostly with a lot of guesswork."[78] By the time of the interview, Ms. Poll was 85 years old. She refused to answer any questions about the course or even about what she did in the service after graduating in the spring of 1942. Unfailingly polite and gracious, even when on the edge of impatience, she steadfastly declined to speak about anything substantive. Part of the dialogue went like this:

> Generous: Do you remember that your professor in the crypanalysis course gave you some rules on secrecy?
>
> Poll: I don't want to answer such questions. You should ask the people at the College.
>
> G: No one at Pembroke knows anything about this story. Only you do.
>
> P: I don't want to answer these questions....
>
> G: Okay, please let me ask you this, then. I don't want to guess that Pembroke graduates were not accepted for jobs with the Navy's code-beakers, if it's not true. The Navy's records count the graduates from other women's colleges but there are none from Pembroke. So, after graduation, did you get a job in OP-20-GR, and work on code-breaking?
>
> P: You should ask the Navy.
>
> G: I've seen all the Navy's records and they leave me guessing. I don't want to guess if you can tell me the truth. Please forgive me if I'm making you angry.
>
> P: Well, you are.
>
> ....
>
> G: Let me close with this, then. Are you reluctant to speak to me because even now you're obeying the Navy's rules of secrecy?
>
> P: Why don't you understand me? I don't want to talk about this![79]

The interview ended at that point, with good-natured goodbyes on both sides. I came away believing that Mrs. Poll was still being loyal to her security clearance. But of course, she left me guessing.[80] And such persistent obedience flies right in the face of her blabbing to the *Pembroke Record* in March 1942.

Mrs. Poll's determination not to speak, despite the possibility that she could perhaps answer most of my questions, raises new ones. Did she get into trouble with Pembroke or the Navy because of those remarks to the campus newspaper, and even

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[78] *Pembroke Record* (Mar. 13, 1942), 4:1. Brown Archives. See text above, page 11.

[79] Telephone interview with Mrs. George A. Poll, June 14, 2006.

[80] Poll wanted the abbreviation "Mrs.," as she made clear to me after I addressed my first letter to her as "Ms."

now speaking about it is too painful? There is no evidence about such a possibility, but it is a plausible explanation for her reticence years afterward.

Did she, a Pembroke mathematics major, who all her life loved doing puzzles, [81] do so well in the course that OP-20-GR hired her, so that even sixty-some years later, she felts bound by its rules? She completed the course in the spring despite the Navy's having blackballed it before it got started.[82] An analysis that her life-long loyalty to the rules explains her lastingly closed mouth is not so plausible, because other women known to the author who participated in Navy code-breaking proudly said that that's what they did during the war.[83]

The final explanation for Mrs. Poll's remaining tight-lipped is the simplest one. Maybe she can't remember much about the course, and covers herself by saying she refuses to talk. We can sympathize with that possibility, and there is some evidence for it. In the interview, she insisted the cryptanalysis course was still being taught at Pembroke.[84] It is not.[85]

The Navy Strikes

That "GR objects" to Professor Bennett's "taking the bit in his teeth" meant that the naval officer in charge of the code-breaking, Lt. Commander R. S. Hayes, was unhappy with Bennett and Pembroke.[86] The result was a quick crackdown, and by February 1, 1942, the Navy's "blackball" had dropped on the college.[87]

Pembroke and its students definitely lost as a result. The first women's college invited, Radcliffe, had 36 students enrolled in the on-campus cryptanalysis course by October 1941, before the other colleges were included.[88] The Navy kept its promise and recruited many of the cryptanalysis graduates into the service. In the spring of 1942, when the first alumnae were graduating, OP-20-GR had no women.[89] But the number of women in the section grew so quickly immediately thereafter that the Navy ceased training male cryptanalysts by late 1942, when even more women's

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[81] *Ibid.*, June 13, 2006.
[82] *Ibid.*
[83] Two code-breakers who were friends of the author at Choate Rosemary Hall and in the 1970s and 1980s boasted of their war work, were Ms. Mary Lou Williams and Ms. Jane Wingerd. I never knew their maiden names, though, which is what they would have been called during the war.
[84] Interview with Mrs. Poll, June 14, 2006.
[85] Gayle Lynch, Brown Archivist, email to author, June 17, 2006.
[86] Hayes' name and tenure is given in "A History of OP-20-3-GR" (7 December 1941 – 2 September 1945), 1.
[87] War Diary 20-GR.
[88] "A Historical Review," 3.
[89] *Ibid.*, 14.

colleges were invited to the program.[90] In July 1942, the inauguration of the WAVES created a place and a status for the women code-breakers.[91] By 1944, there were more women than men in OP-20-GR.[92] Several hundred of them were graduates of the college course for which Pembroke lost the Navy's sanction.

But whether the enemy would have discovered the program from Pembroke's indiscretion is doubtful The Germans disregarded all evidence that the Enigma cipher could be broken. They believed their machine was too complicated for any snooping.[93] The Japanese were willfully blind, as well. They, moreover, seemed not to have any good spies in the United States who might have read some of Pembroke's remarks. A much greater breach of security than the Pembroke incident recounted here, but illustrating vividly that Japan's officials were unable to see what was going on with their ciphers, was the fact that three days after the battle of Midway in June 1942, newspapers in Chicago, New York and Washington ran stories about the role code-breaking had played in the great and surprising victory by ragtag American forces against a much more powerful Imperial Fleet. The story ran on for two months because the Roosevelt Administration tried to punish the *Chicago Tribune,* a long-time political opponent. In response, the *Tribune* continued to write about the code-breaking.[94]

It's hard to imagine that if the Imperial Japanese Navy failed to notice what was appearing over a considerable length of time in major newspapers in America's largest cities, it would have discovered the deciphering of its codes in the Brown and Pembroke course catalog, campus newspapers, or even the *Providence Journal.*

The mysterious magazine? Let the reader decide whether the Japanese would have seen that one, but the author thinks "Doubtful."

It's an interesting story, all the same.[95]

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[90] *Ibid.,* 7-9.

[91] Farris, IThe Simon and Schuster Encyclopedia, *670.* "WAVES," incidentally was a most clever acronym for "Women Accepted for Voluntary Emergency Service."

[92] "A Historical Review," 14.

[93] Budansky, 1-9.

[94] *Ibid.,* 248-250.

[95] This article was originally researched and written in the spring and summer of 2006. After failing to find a publisher for it, I stored it digitally in two laptop computers. They were both stolen by a burglar on December 30, 2008, and for several years thereafter I believed that the piece was lost because no "hard copy" existed. Then, the text you have just read was found on January 8, 2012 in an unaddressed envelope in the attic-like room over my garage at my home in Carrboro NC. No bibliography was appended to this copy, although one was certainly created.