World War II

While in Chicago in December, 1940, to interview prospective recipients of Rochester Prize Scholarships, Hovde received a telephone call from Washington. Would he, asked the caller, come to the nation’s capital to talk about joining the newly formed National Defense Research Committee (NDRC) and going to England to help organize and expedite the exchange of information between British and American scientists in war research?

The voice was that of Carroll L. Wilson, one of the first two men appointed to the NDRC staff. He was executive assistant to, and eventually the alter ego of, Vannevar Bush, scientific genius from the Massachusetts Institute of Technology who conceived, created, and ran the U.S. civilian wartime scientific research effort.

Hovde gave Wilson no immediate answer, promising a reply later. “When I got home,” Hovde recalls, “I discussed it thoroughly with Priscilla. I felt that the conflagration in Europe would soon engulf the whole world and that I should get into it. She really wasn’t much help in making a decision because she agreed to whatever I wanted to do regardless of how she might have felt personally.

“Then I called my friend Lee DuBridge, a physicist who had left the University of Rochester to work for the MIT Radiation Laboratory in defense research. I asked him what it was all about—just what the hell was going on. ‘Take it,’ he told me, ‘It’s important and it could have an effect on the war effort.’”

In Washington, Hovde met with Bush and Wilson. “You are,” Bush explained to him, “to be one of a party of three under Dr. Conant [James B., president of Harvard] going to England. Then you'll stay in England to set up the office for the exchange of scientific information and provide liaison with the entire British scientific effort.”

The British Isles lay in great peril. Hitler had ripped into Poland sixteen months earlier, and in less than a year
most of the European continent was under the Nazi boot. A phony pact between Hitler and Stalin permitted them to slice up most of Eastern Europe and gave the erstwhile Austrian army corporal opportunity—or so he thought—to turn his attention to the west.

Belgium, the Netherlands, Luxembourg, and Denmark fell in domino fashion, virtually with little or no fighting. Quisling handed Norway to the Germans literally overnight. The Maginot Line, cemented in place along the Franco-German border, quickly proved to be a military dinosaur. France fell before the blitzkrieg in twenty days. Only the British managed, somehow, to turn the desperate evacuation of its armies from Dunkerque's beaches into a kind of victory.

In the summer of 1940, an invasion from the Continent was a foregone conclusion. Hitler's submarines took a ghastly toll in British shipping as the Luftwaffe prepared for a series of massive daylight air attacks against the British island. The first came on August 8. For ten consecutive days—but notably on August 15 and 18—men and women in the streets of English villages and towns watched as high in the summer sky British Spitfire and Hurricane fighters engaged the Heinkel, JU, and Messerschmidt aircraft in the fierce and prolonged combat which came to be known as the Battle of Britain.

The battle was still at its height on September 20, 1940, when Prime Minister Winston Churchill, before the House of Commons, paid his immortal tribute to the British airmen who, "...undaunted by odds, unwearied in their constant challenge and mortal danger, are turning the tide of world war by their prowess and by their devotion. Never in the field of human conflict was so much owed by so many to so few."

In his three years as a Rhodes scholar, Fred Hovde had come to respect, admire, and understand the British. As he was convinced that the European war would soon become a worldwide conflict, so was he certain of British indomitability in spite of this bleak hour in English history.

In an obscure notepad he carried in 1940, Hovde either copied or penned from memory words he attributed to Emerson:
This England

Let who will fail
England will not.
These people have sat here
A Thousand Years and
here will continue to sit.
They will not break up
or arrive at any desperate
revolution like their neighbors
For they have as much energy,
As much continence of character
as they ever had.

He also wrote in his London diary that "these English people have a blind faith in their destiny. They draw the veil over the unhappy, unpleasant facts and only allow themselves to have an unbounded confidence in themselves and in Englishmen in general. No imagination is a lack needed by the warrior, the sailor, the RAF pilot."

Though for most Americans the war in Europe seemed remote, the consensus among U.S. leadership was that the fate of the British was inextricably our own, that Great Britain was our blood ally, that eventually the United States would be actively engaged in the conflict.

Bush was earliest among those who believed fervently that the United States could waste no more time in organizing science for the war, that to wait until America was actively engaged in it would be too late to begin to develop the instrumentalities that would be needed to win. He had discussed his proposal for such a scientific organization with many of his colleagues, among them his former boss, MIT President Karl T. Compton; Harvard President James B. Conant, who ultimately became Hovde's boss; Frank B. Jewett, president of Bell Telephone Laboratories and president of the National Academy of Sciences; and Richard V. Tolman, the distinguished physicist-dean at the California Institute of Technology. They all agreed with him.

Bush was a remarkable man—perhaps the most remarkable engineer-scientist in the United States at the time. Born in Everett, Massachusetts, in 1890, the son of a Universalist minister, he felt most at home on the waters around Cape Cod. As a youth, he had worked as a cook on a Yankee mackerel smack and pumped the organ in his
father's church. A Tufts graduate (1913), he worked simultaneously on two engineering doctorates—one at Harvard, the other at MIT—while holding three jobs, one of them an instructorship in mathematics at Tufts. He worked in a Navy antisubmarine laboratory in World War I and went to MIT in 1919 as an associate professor of electrical engineering. By 1932 he was an MIT vice-president and dean of engineering, had invented the then remarkable differential analyzer (a forerunner of the modern computer), and produced a bag of other inventions which included a justifying typewriter and improvements on the four-engine bomber and the vacuum tube.

In 1938 he left MIT to become president of the Carnegie Institution of Washington, the operating agency for the far-flung research activities financed by Andrew Carnegie. (Bush once told Hovde that being president of the Carnegie Institution of Washington was "one of the world's best jobs—no students to worry about, no faculty to handle. Only scientists working on problems no one else is interested in.")

In 1940, Bush's work was widely known among army and navy officials and he had become chairman of the long-established (1915) National Advisory Committee for Aeronautics. Bush was about to draft legislation for formation of the NDRC, but Hitler's armies had swept through Europe so rapidly that he decided to shortcut the legislative process and go directly to President Roosevelt. He was able to convince FDR to establish the NDRC by executive action and won the president's keen interest as well as that of the army, navy, and air corps despite their traditionally entrenched suspicion of civilian involvement in military affairs. Bush also had the eager hand-in-hand support of the National Academy of Sciences.

At FDR's instruction, Bush quickly conferred with chief White House aide Harry Hopkins, then submitted the names of Compton, Conant, Jewett, and Tolman for membership on the committee, adding also that of Conway P. Coe, commissioner of patents. Roosevelt signed letters of appointment on June 15, 1940.

Next, Bush made two staff appointments. The first was Irvin Stewart as executive secretary. Stewart, a Texan who had served three years on the Federal Communications Commission, knew his way through and around the Washington bureaucratic maze and the inevitable red tape. The
second appointee was Wilson, Bush’s former assistant at MIT and the person who had first telephoned Hovde.

On July 20, 1940, a full week before it formally came into being, the NDRC was functioning in office space in the Carnegie Institution of Washington building and in the National Academy of Sciences building.

Even before Roosevelt signed a formal order (dated July 28, 1940) of the Council on National Defense establishing NDRC, Conant, Jewett, and Wilson were busy assessing potential assistance from the nation’s colleges and universities. They wrote to 725 such institutions for information on facilities and staff, as well as to 50 larger universities with extensive advanced research facilities. The data they gathered were put into a report compiled by Wilson titled *A Report on Research Facilities of Certain Educational and Scientific Facilities*. It came to be known among NDRC staff members simply as “the bible.”

Bush felt that not only was an inventory of the nation’s scientific manpower and facilities essential, but also no real progress in war research would be accomplished without a workable interchange of information among the allied nations, chiefly the United States and Great Britain.

While NDRC gave the United States eighteen months’ start on organized defense research before Pearl Harbor, even more time was to be gained through a scientific information exchange with the British. A pioneer in achieving this goal was Prof. Archibald V. Hill, member of Parliament from Cambridge University, 1922 Nobel Prize winner for physiology and medicine, and secretary of the British Royal Society since 1935. Professor Hill came to the United States in 1940 as a temporary scientific attaché to the British embassy. But he got nowhere with scientific interchange; the British were loath to give away their defense secrets to a neutral power, and he, of course, had no authority to do so.

Upon returning home, he pushed assiduously for U.S.-British-Canadian scientific exchange; the fall of France had made it urgent to do so. A British scientific mission headed by Sir Henry Tizard, rector of the Imperial College of Science and Technology, arrived in Washington late in August, 1940, with Canadian military and scientific representatives. They brought a black box filled with blueprints and “memoranda of extra-ordinary scientific importance” as well as full authority from Prime Minister Churchill to dis-
close any secret information in possession of the British government in exchange for U.S. secrets—radar, fire control, underwater detection, communications, turrets, superchargers, chemical warfare, rockets, high explosives.

In that interchange, the British gave more than they got. The United States gained twelve months of rich research, including the resonant cavity magnetron (a type of vacuum tube), which was the breakthrough needed for development of microwave radar. The result of the interchange was a great stimulus in developing new weapons on both sides of the Atlantic.

The United States, Canada, and Great Britain met September 27, 1940, to work out a broad outline for continued three-nation scientific interchange by way of Ottawa. It proved to be less than satisfactory. Further, Bush had had in mind for many months the establishment of a London office of NDRC. While the United States was ready and willing to have a British liaison office in Washington, the establishment of an NDRC office in London required an invitation of the British government, which was finally cabled to Washington on January 20, 1941.

Earlier, Bush with Conant and Wilson had conducted a search for the “right man” to direct the London mission office. They went to Frank Aydelotte, then head of the Institute for Advanced Studies at Princeton, New Jersey.

Aydelotte was a Hoosier from Sullivan, Indiana, a Rhodes scholar who from 1921 to 1940 served as president of Swarthmore College and simultaneously as American secretary of the Rhodes Scholarship Trust. In that position, he got to know most of the young men who were selected for Rhodes Scholarships and to watch them as they studied and developed, returned to the United States, and began careers. Thus, he was much sought after to help tap the pool of highly trained and educated young men who had gone to Oxford.

Aydelotte had watched with great and friendly interest the young but luminous career of Fred Hovde since the day Hovde had been awarded his North Dakota Rhodes Scholarship in 1929. Aydelotte knew Hovde had ideal credentials for the NDRC job: he was a man of science, had experience in administration, had lived as a student with the English, and had come to a great understanding and affection for them. He was a resourceful, brainy, and personable thirty-two-year-old on the way up.
Could Aydelotte recommend anyone who was well qualified to run NDRC's London office? “Fred Hovde,” Aydelotte replied without hesitation. Aydelotte wrote to Hovde ten months later that “so far as my part in all this is concerned, I consider that I was conferring a favor upon the American government in assisting them to get hold of you and I was more than pleased at the expressions of satisfaction which I received from Conant and Bush with your work.” In the same letter, Aydelotte also informed him that the trustees of Franklin and Marshall College, Lancaster, Pennsylvania, were interested in talking to him about the presidency there. Hovde never pursued it.

Following his acceptance of the NDRC appointment, Hovde’s days in January, 1941, were busy with frequent trips between Rochester and Washington to wind up his university and personal affairs while attending long “state-of-the-art” briefings on NDRC activities and proposals for the work in London. The routine paperwork connected with his appointments was completed except for the required military security clearances which seemed to Hovde to take an inordinate amount of time.

Although President Valentine was reluctant to lose him to the government service, he recommended an indefinite leave for Hovde from the University of Rochester, which was granted by the board of trustees on January 18, 1941. Later, Valentine wrote a private note to Priscilla informing her that if she really did not want her husband to take the London assignment (one with potential personal peril because of the almost daily bombardment) he could stop it. She remained silent.

Bush wrote to Valentine expressing his “appreciation . . . [and] my personal thanks for making it possible for Mr. Hovde to accept a position with this committee. I assume that he has told you confidentially what will be involved in this work. I might add that we consider this branch of our activities as a most important one and that it seems to us that Mr. Hovde’s experience and background will give him unusual qualifications for this position.”

Bush went on to say that he “understood fully” the sacrifice the university was making in releasing Hovde for war work “but in so doing you are making a significant contribution to our national defense effort.”

Hovde had to get permission from his local draft board in Rochester to leave the United States, obtain his passport,
get vaccinations against smallpox, typhoid, and influenza, and take care of a thousand other details—one of which was to “get a new leather frame for the picture of Pris and Boyd.” He had also worked out a detailed six-month personal budget to insure adequate funds to maintain the Hovde household (wherever it might be) as well as provide him with personal maintenance funds while living in London.

While his days in Washington early in 1941 were busy with preparations for the London mission, Hovde found the evenings in the capital away from his family almost intolerably lonely, foreshadowing a feeling he bore throughout his months in London. Some evenings were spent at the office, preparing charts for the London office or reading up on ordnance problems. (“The whole scientific foundation of firing a cannon is terrific,” he wrote home.) Other times he found himself alone, taking walks and idly window-shopping. More often than not, he and Carroll Wilson had dinner together and wound up in long evening conversations with other NDRC scientists.

Hovde was basically a family man who spent most of his spare time with his wife and son. Although he was eager and excited about the challenging adventure ahead, he begrudged the separation from his family far more than any of the personal discomfort he experienced during the thirteen months he spent as NDRC liaison officer in London.

Yet, he nearly always managed to maintain his optimism and cut through the gloom of the impending family separation with quiet, inner strength. His letters home—newsy, descriptive, and interesting—always included a note of optimism and an affectionate, playful “hug” for Priscilla and Boyd. Hovde closed one letter from Washington, written on an office scratch pad: “It’s cold here but the sun is shining and I love you more than ever so there’s still some happiness to be had. Kisses to the Bunks (Boyd) for me and I’m making a face at you.”

Conant, Wilson, and Hovde were the central figures in Bush’s London mission plan. Conant was to head it. Impatient to proceed with the interchange of scientific information which he knew was vital to the allied war effort, Conant had earlier asked Bush to assign him to inaugurate the U.S. mission to Great Britain. Bush did not relish losing his top aide even temporarily, but he finally agreed, and
Roosevelt expressed delight that Bush had chosen Conant to head the initial scientific contact in England. Wilson and Hovde were to accompany Conant; and Hovde would remain for at least six months, but more probably a year, as secretary of the NDRC's London office in the American embassy after Conant and Wilson returned to the United States.

Until the trio sailed from a Jersey City dock on February 15, 1941, aboard the American Export Lines steamship Excalibur, the mission had been more or less secret. A White House announcement of Conant's trip received prominent and detailed accounts in most of the eastern newspapers and on the national wire services. The papers carried photos of Conant with Wilson and Hovde aboard the Excalibur at dockside.

The White House couched its release carefully, emphasizing that "the first-hand observation of recent English scientific research and experience is important for the prosecution of America's program of research on problems of mutual defense." The German propaganda agency quickly replied with its own wildly speculative announcement that Conant (a chemist) and his assistants (Hovde was a chemical engineer) had been dispatched by Roosevelt to help the British start gas warfare.

The New York Times noted that Conant, as spokesman for the mission, "consented to pose for photographs but declined to comment on his mission. 'As president of Harvard University, I'd love to talk to the press,' he said. 'But as the head of a government mission my mouth is closed.'"

Conant was one of the first American educators to advocate entry into the war on the side of Great Britain and joined a growing group of prominent Americans—Wendell Willkie and New York Mayor Fiorello LaGuardia among them—in testifying aggressively for the Lend-Lease Bill before the Senate Committee on Foreign Relations.

Hovde thus was seated on the front row for one of the most dramatic events, or series of events, in contemporary history.

Aboard the Excalibur with the Conant-Wilson-Hovde party was a wide-ranging assortment of ninety-six other passengers—among them William D. Bayles, a Time-Life correspondent on his way to cover the London Blitz. Bayles had authored Caesars in Goosestep and thereby got himself put on the Nazi "kill" list. In London, Bayles and Hovde
shared a Berkeley Square flat which became a foregathering place for Hovde and Bayles’s friends—and their friends’ friends.

The principal route to England in 1940 and 1941 was by way of Lisbon, thence into England via air. The *Excalibur* was brightly floodlit and had huge American flags painted on its sides to signal Nazi U-boat captains that it was a neutral ship and not a torpedo target. Its route to Lisbon included stops at Bermuda and the Azores, a trip Hovde described in a later letter home:

The voyage aboard the *Excalibur* was one of the finest—good weather, no seasickness, excellent food, and an unusual crowd. There were no college lads and lassies off for a European binge for us to stumble over in the bar or in the lifeboats. The passenger list of 96 was heterogenous: four or five American journalists bound for all parts of the continent, seven secretive Scandinavians who later proved to be aviators trained in Canada and bound for active service in England; five Japanese headed for Berlin to learn how they do it (they spent all of their time in the bar, drinking like fish to qualify for the Japanese foreign service); a young American doctor off to Madrid to study typhus; a Belgian baroness using everything she had to get to England ostensibly to settle her financial affairs; ex-ambassador John Cudahy enroute to Berlin to report for *Life* magazine (I shudder to think we are represented by such muddleheads in our foreign service); three or four Englishmen returning from various missions to the United States or South America; a Standard Oil representative going to Jugoslavia—Lord knows where he is now; a wild young Peruvian aviator we nicknamed “the Flying Inca” who was celebrating his last days as a free man before his marriage which was to take place in Italy; several businessmen bound for several places . . . and sundry other people who kept pretty much to themselves.

Hovde depicts the voyage as one of relaxed luxury. Yet, always in the aboard-ship undercurrent was the anxiety of the European conflict and what lay ahead. He and his two companions spent many hours during the voyage working on their plans for the mission. There was work, but there was mostly play. After a pleasant interlude in a stopover in Bermuda on February 17, 1941—only two days out of New York—Hovde observed that “we ought to rename the NDRC Mission the NDRC Junket.” For dining, Conant, Wilson, and Hovde were assigned to the captain’s table and the conversations around it went on for hours.
The voyage was the opportunity Hovde needed to get acquainted with Conant; aboard ship he honed his lifelong affection and respect for the Harvard president, whom he always referred to (at least to others) as “J. B.” Hovde wrote to Priscilla, “J. B. is swell. He approaches his mission with great seriousness and responsibility, but with a boyish spirit that makes Carroll and me look like old men. . . The three of us can’t and never will understand why others refused to undertake going to England. Perhaps we’ll understand later.”

Except for his ill-concealed contempt for former U.S. ambassador John Cudahy, then on a special assignment for Time-Life (“he was practically rude to J. B. and kept asking silly questions”), and a minor British official named Hey, whom Hovde felt was preoccupied with patronizing or ridiculing Americans, the trip was an intellectual stimulus for Hovde because of its international character.

“Everybody’s experience has been so varied and in so many different parts of the world that talk flows around the table without end,” he wrote to Priscilla. “Yet, it is all very interesting—everything from the Marxian interpretation of history to the barnacles on the ship comes within the purview of our group. Last night’s prize saying was that the Nobel Peace Prize was to be awarded to the Italian navy.”

Ship talk also turned to the debate within the United States over involvement in the war. After one dinner conversation, Hovde noted that “the English can’t understand two aspects of American thinking at the present moment. They can’t believe men like Lindbergh, Wheeler, etc., are sincere and honest; and they can’t understand that Americans do not love Englishmen just because they are English. The English fail to realize that the [American] motivation for helping them springs out of self-preservation and interest, not Anglophilism.

“Conant’s explanation of the position of the Lindbergh school versus the FDR school is beautifully simple. If you accept the premise that nothing is worse than war, the Lindbergh school is right. If you accept the premise that there are things worse than war, then the FDR school is right.”

The Excalibur sailed into Lisbon harbor February 25, 1940.
Priscilla had made the trip from Rochester to see her husband embark on what was supposed to have been six months of duty in London. At dockside with Fred and Priscilla just prior to departure were their close friends Clara and Malcolm MacIntyre. After the *Excalibur* left its Jersey City mooring, she returned to her hotel in New York, packed, met friends who took her to a Broadway play and dinner, then caught a late night train for the return to Rochester. Still, she suffered a feeling of emptiness. It was the beginning of the longest separation they had experienced in the first eight years of their marriage.

“I had thought the sailing was going to be very grim,” she wrote in her first letter to London, “but the passengers for Bermuda saved the day. I shall always be grateful to whoever’s fault it was that the boat was late in sailing, for it gave me two extra hours with you.”

Although he viewed his new assignment in London as essential to the defense effort, Hovde was well aware of the tremendous family sacrifice involved. Throughout his absence, he made a special point of writing brief but meaningful and individual letters to six-year-old Boyd, “talking” to him about his work, the things he saw, the places he visited, the importance of taking care of his mother—but mostly of how much he missed their family life together. These notes to Boyd were in addition to the almost daily, diary-like correspondence which streamed home to Priscilla from London.

“The papers here had carried the story of the mission Saturday night as well as Sunday,” she wrote, “so Boyd knew finally that you were not just taking your annual trip. We had a long talk Sunday morning about your voyage and the work so that he would have as clear an understanding as a six-year-old could. He was wonderful in his attitude, Freddie, and I just wish I could take the space to tell some of the intelligent questions he asked.”

A year later, Boyd, in the newly learned cursive of a second-grader, sat down to write his own rules for helping in national defense. On wide-spaced, lined paper which he sent to his father were written in a seven-year-old's uncertain scrawl:

**Helping in Defense**

1. Don’t bother Mother when she is busy.
2. Do things by your self [*sic*] and for your self.
3. Pick up your cloths [sic] by your self.
4. Stay at the table until you are through eating.
5. You can take the baby for a walk.
6. Put your toys away when you are through.
7. Keep your feet clean when you come in.

The day after she returned to Rochester, her telephone rang nearly constantly as friends and acquaintances called about the mission, the news stories regarding it, and “all the women saying ‘How did you ever let him go!’”

A Rochester Times-Union reporter interviewed her and took a picture. “I guarded every word and the gist of the whole thing was that I was very proud of you, that the sailing was very gay...” she wrote. “All perfectly innocuous, but still I didn’t appear too idiotic. At Book Club that afternoon there was constant talk of your trip. It was a little rough to take.”

But the stark reality of the changes the war brought to the Hovdes hit Priscilla hardest as she went about the devastating task of breaking up their Rochester household, then at 23 Greenview, and returning to Minneapolis-Saint Paul for “the duration”—or at least until her husband returned to the United States from London. March 14 was moving day for Boyd and Priscilla. Since she was early in her second pregnancy, the job of moving and the long train trip to Minnesota were exhausting.

She was glad, however, to be back again among family and friends. Still, there was a letdown for Priscilla, and a brief period of depression and longing for the stimulation of the university atmosphere in Rochester and the warmth and support of their friends there. That, combined with the demand to make many decisions and the problems of finding a suitable home, finally caught up with her. “I suppose something will happen for the good soon,” she wrote despairingly. “This is my Hell. All of it must be kept absolutely to myself—except you.” But with few exceptions, they made it a point in their correspondence to be cheerful, newsy, and supportive, making the separation of two courageous persons at least bearable.

His decision to join the war effort and go to England was disturbing also to the “other” woman in Hovde’s life—his mother. Three days before the Excalibur sailed, she got the news by telephone from Priscilla’s mother and sat down to write:
Dear Son:

Mrs. Boyd called last night to tell us the news. I have felt so safe and smug about my two boys, that the war couldn't touch, and now you are right in the thick of it. When you all were small and I felt I had more than my share of work and hardship, my father said to me: "Enjoy the children now when they are small, for the years will bring much more heartbreak and worry than you have now." That was thirty years ago and I thought he didn't know what he was talking about. But his years of experience were speaking and I have found it very true.

From now until you have returned safely, I'll be worrying about you. You see, you are still our son and we love you and are proud of you just as you and Priscilla love and adore your little son... Our prayers go out for your safety until you come back to our own beloved country. Do your best work, dear son, and we are proud of you even as we are unhappy about your new position.

Mother

In Lisbon, Conant met the newly named American ambassador to the Court of Saint James's, John G. Winant, who immediately invited Conant to proceed with him to London aboard the ambassador's plane. Conant was on hand when Winant was ceremoniously greeted in England by King George and Queen Elizabeth. Hovde and Wilson, meanwhile, stayed behind, pending establishment of their plane priorities. But the week it took to get into England was, like the Atlantic voyage, another pleasant interlude—pleasant but frustrating. They stayed at Estoril, a kind of Portuguese Riviera not far from Lisbon. On their way, they stopped at the British legation to learn whether plans for their trip to England were being readied.

"They had heard of James B. Conant, but they didn't know we existed," Hovde said. Cables flew back and forth between Lisbon, London, and Washington to arrange priorities for two-thirds of the NDRC London mission while Hovde and Wilson spent their days walking in the nearby hills and on the sunny beaches. Evenings they ate leisurely suppers and hung around the hotel casino to watch the gambling. In London, Conant fumed at the foul-up which kept his NDRC companions in Portugal.
On March 2, Wilson and Hovde received word that the way was cleared for their flight to London. In Lisbon, after lunch with friends, they headed for the British Overseas Airways to get their tickets—only to learn they couldn't get them without a Portuguese exit visa. They dashed to the American legation and got a messenger to go with them to the Governo Civil, where somehow they greased the way to get their visas by 6 p.m. the day before they were to leave for London. On Tuesday, March 4, Wilson and Hovde were awakened at 4 a.m. They gulped breakfast and got to Cintia Airport for departure to London aboard a KLM Airlines DC-3. Heading seaward, the plane flew a circuitous route away from the European coast to avoid "problems" with marauding German fighter patrols. They sighted a distant plane "which could have been an enemy aircraft, but we weren't bothered," Hovde recalls.

About an hour from landing, the pilot came through the cabin and "put up blinds on the windows to prevent our seeing things we shouldn't." After seven and a half hours in the air, their plane landed somewhere in southern England.

"Conant had raised such a fuss about our being left behind in Lisbon that an English official met us, whisked us through customs, put us in a big Daimler, took us to the station, purchased our tickets for London, and in general treated us as our hurt egos wanted," Hovde later wrote.

Their train arrived at 8:30 p.m. in Paddington Station in London where they were met in the dimly lit station by a party that included Conant and J. D. Cockroft of the British Ministry of Supply. They crammed into a cab and headed off into the blackout.

Familiar as he was with London from his days at Oxford, Hovde was astonished at the completeness of the London blackout. "Your first taxi ride in the blackout is a bit terrifying," he told Priscilla in one letter. "The old cabbies seem to be driving from memory. Although they drive fairly slow, it seems too damned fast for comfort at first."

Hovde and Wilson were put up at London’s poshest hotel, Claridges, its interior brightness accented by the contrasting blackness outside. "When our little greeting party broke up at about 11:30 p.m., Carroll and I couldn't resist the temptation to go out for a short walk in the streets. All was quite deserted; an occasional taxi cruised by and we passed several pairs of policemen patrolling their beats in their battle bowlers, and now and then a pedestrian on his
late way home passed by," Hovde wrote. Hovde and Wilson moved from Claridge's to the Grosvenor House not long after they arrived; it was safer—and cheaper.

The first days following Hovde's arrival were filled with a series of typically British formalities for greeting the American trio, especially Conant. Hovde was also busy establishing an office in the American embassy as well as registering as an alien with Scotland Yard and attending lunches, dinners, and cocktail parties to get acquainted with people of the British wartime ministries, the scientists, and other officials he would work with over the next year and a half. And there were, it seemed to him, endless conferences and committee meetings. It appeared to pay off.

"The welcome," Hovde recalls, "especially that given to J. B., was overwhelming in its sincerity and genuineness—so much so that it was really touching. Since the initial welcome, our work has gone on without any stickiness or difficulty of any kind."

Although he was impressed by the willing and cooperative atmosphere he seemed to find everywhere in England, professional jealousies were inevitable—overtones that he knew he would have to deal with as American liaison officer in coordinating research efforts of two diverse peoples. Professor Hill, the ardent apostle of scientific exchange between Great Britain and America even prior to the Tizard Mission, was secretary of the Royal Society—"holy of holies" in the scientific community. He tried to explain to Conant, Hovde, and Wilson the organization of the British wartime scientific effort. It was a revelation that Hovde quickly perceived as "complex, but operating on the English principal of personal individualism in spite of crosscurrents of structure and personalities."

Hovde knew that working with various directors of scientific research could be ticklish business. "All is not too smooth in the ranks of the [various directors]," he wrote in his diary. "We'll have to watch our P's and Q's and play no favorites. This is a scientific war and the scientists are perhaps a little too individualistic to fit into good teamwork."

He continued to be impressed by the razor-sharp mind of Conant; if Hovde really ever idolized anyone, it would be him. Undoubtedly, Hovde's own style as an administrator, scholar, and university president was greatly influenced by his admiration of Conant, of whom he wrote in his diary:
"J. B. C. is grand—a marvelous leader, a quick and incisive mind—gives careful thought to all problems before he speaks. He is full of fun and good humor and you ought to hear him swear!"

Hovde wasted little energy and motion in establishing his new position. There were no precedents for it, no previous pattern established, so that guidelines for liaison and the decisions involved in his day-to-day duties were based not on some well-spelled-out procedures manual, but upon the facts at hand in each situation with which he dealt.

The mission's work while Conant and Wilson were in England involved not only establishing an office and traveling throughout the country to various projects and facilities, but also a modicum of high diplomatic activity, such as Conant's early "command performance" at lunch with the king at Buckingham Palace, his later meeting with the lord mayor of London, and his talks with Prime Minister Churchill—events about which he talked very little, even to Hovde and Wilson.

The mission's immediate job was to inspect the British "gadgets of war" in operation. One of Hovde's lifelong attributes has been his ability to look at most problems in their broadest scope and quickly recognize the relationships among all of their elements. The problem of scientific research in war extends far beyond the laboratory, even beyond the development of the weapon itself (not to mention the probable politics involved). There is testing, retesting, trials in the field, the problems of manufacturing, transportation, and repair and maintenance. But perhaps most important in new weaponry is the training of the personnel who must use it. The problems in totality then are usually compounded by the urgency or need for the weapon as soon as possible.

In one inspection, the British showed Conant, Wilson, and Hovde "the gadgets we were interested in seeing" (as Hovde put it) and explained their big problem in educating scientific users of the instruments. The British asked Conant to go back to America and "send us scientifically trained people to help us operate, repair, and build these instruments." Hovde's diary does not reveal the nature of the weapon, but it probably was radar or a similar device. Nevertheless, the British made it clear that training personnel in the use of scientific weaponry was their principal con-
cern, a problem "which hitherto we had thought was largely academic." And Prime Minister Churchill had made it quite clear it was of major interest to him also.

Hovde's often-made comment that World War II was the "scientists' war" was based partly on his own experiences and partly on the defeat of the Luftwaffe by a handful of Spitfire and Hurricane fighters in the 1940 Battle of Britain. The difference was simply that British science had developed radar and the Germans had not.

The Royal Air Force strategy against the massive Luftwaffe air raids was to assemble sufficient strength in fighters at the required height at a given place at the proper time to intercept the oncoming enemy formation and break it up before it reached its target. Radar alone made such strategy possible.

The idea of employing "standing" air patrols was impractical simply because of its obvious wastefulness; the RAF did not have enough planes or fuel. Therefore, the fighter force was kept on the ground, at ready, and was ordered into the air only when an attack was imminent. Radar detected oncoming Nazi raiders, and indicated their direction, speed, and approximate size of force. That information, fed into an ingenious warning system operation, enabled the RAF to "scramble" its fighters most effectively.

When the Luftwaffe launched its massive air offensive in the fall of 1940, it began immediately to suffer huge plane losses because of the RAF fighter interceptions. The Nazis lost 180 aircraft in one day, August 15, 1940, and 697 aircraft in one ten-day period, while British losses were negligible.

By the end of October, the Luftwaffe abandoned daylight attacks against the British island altogether and began to rely entirely on night attacks—a tacit admission of defeat. More importantly, the end of the massive daylight raids meant an indefinite postponement of the expected Nazi invasion which never occurred.

Military and scientific historians may argue endlessly over which was the more important scientific development to come out of World War II: the A-bomb or radar. Obviously, the most significant for mankind was the introduction of the horrendous, destructive potential of atomic energy. But it may be also argued that had British science not developed radar, an early Nazi victory over Great Britain was quite probable, and would have thus denied the United
States the necessary time to develop and manufacture the A-bomb.

As the days went by the work intensified. “We all agree,” Hovde wrote in his diary, “that we should get more help over here—this job is bigger than any of us ever thought. The British have done a tremendous amount of research and development and I suspect that we are going to take more than we give in this line of goods.”

His days usually started at about 6:30 a.m., and the times were rare when he could get to bed before 11:30 p.m.—often to be awakened by the nearby anti-aircraft batteries that threw tons of shells nightly at the German bombers headed for Liverpool, Bristol, and other industrial cities. “. . . But we sleep very well,” Hovde wrote in his diary.

Despite the pace and intensity of his workday responsibilities, Hovde found time to look for a flat and to renew his friendship of more than ten years with Tom Tanner, the rugged, Quaker, vegetarian friend he came to know so well as a rugby teammate in 1930.

The war had subdued London’s social life. Those few evenings Hovde did not spend at his embassy office were usually spent with such friends as Tanner or with American or British colleagues—or in reading, or writing to Priscilla.

Tanner, the Glasgow lawyer, was adjudged a conscientious objector when the war broke out and was sent to a civilian ambulance unit in London. Within six months, he ran the 180-man unit and also the bomb shelters in London’s East End, where he had befriended literally hundreds of cockney East Enders, who virtually lived in the shelters. “Hell, after the war he could have been elected lord mayor of London if he had lived,” Hovde says of Tanner’s popularity.

Tanner took Hovde to London’s East End one night to see a part of the work he was directing. “We had a plain but good dinner with the boys,” Hovde wrote. “Next we drove to see the shelters—what hellholes they are! Filthy, foul, crowded, no sanitary facilities—yet the people are cheerful and can take it. It seems as though 80 percent of that part of the city has been destroyed. I saw the first children in the shelters—London streets have few children about.”

“Back at the hotel at 11 p.m. What a contrast between Tom’s shelters and the lord mayor’s luncheon. This was one of our most rigorous days (March 13) both physically and psychologically.”
The next day, Hovde’s long search for a flat seemed at an end. “I looked at a nice flat at 20 Grosvenor Square. Price 8 g. Think I’ll take it and look for a roommate,” his diary notes.

That afternoon, he met Tanner, and the two of them had tea with Carroll Wilson and Bruce Smith, American Red Cross representative in London. Tanner then conducted Wilson and Smith on a tour of the shelters as he had Hovde the day before, while Hovde spent the interim writing to Priscilla.

“They had their eyes filled, all right, by Tom’s trip,” Hovde recalls in his diary. “The next day Carroll was sick and stayed in bed. The experience of the night before was too much for him!”

While Conant was in England, he was invited to take an honorary degree from Cambridge, a ceremony, Hovde later wrote, “with benefit of Latin eulogy and bad Latin puns as was to be expected.”

While in Cambridge for Conant’s degree ceremony, Hovde conversed with Cambridge scientists and later observed: “The scientific talent there [Cambridge] is enormous and on the whole they think the scientists here [London] have been badly used. They damn the secrecy; they don’t know who the others are on the same problems; they feel they aren’t working on really important things.

“The students (scholars) who are left at Cambridge are pacifistic and thinking of ‘peace aims’; the rest have gone to war. J. B. said there were too many of the same type at Harvard.”

In the same diary entry, Hovde wrote, “Just happened to cross my mind—I haven’t heard a good joke since I’ve arrived. They just don’t tell jokes anymore, I guess.”

Hovde’s first chance to visit the old Oxford haunts he had left a decade earlier was on Sunday, March 23, when he packed a bag and caught “a beastly crowded” noon train from London. “I walked up through the city and, as I expected, it hasn’t changed,” he wrote. “I found my old scout, Taylor, at the Brasenose Lodge and I also went to visit ‘Sonners’ who looks just the same as ever.” “Sonners” was W. T. S. Stallybrass, the German-born principal and law tutor of Brasenose College when Hovde was a Rhodes.
Tea with Sonners brought the tragedy of war more intimately close than ever to Hovde. He learned that Brasenose college had lost thirty-four men in the RAF alone. Brasenose and one other college together had more losses than all of the other Oxford colleges combined—"I should guess nearly 10 percent," he wrote. Percentages are statistical losses; the names of dead friends, classmates, and rugby teammates from his Oxford years were deeply personal ones: Michael Peacock in France; Max Scott somewhere in Europe; Ian Lawrie, the Scot lawyer, was last seen at Dunkerque. Bill Roots, an Oxonian friend from Jamaica, was an artillery captain in Eritrea, he learned from Sonners. Roots's wife, a nurse in Saint George's Hospital in London, had not heard from him in more than six months.

While Hovde spent his first sojourn in Oxford in pleasant conversations with old friends of the faculty—Sonners, the C. K. Allens at Rhodes House—and renewing many other acquaintances, it was also a jolting reminder of war's unspeakable waste of strong, fit bodies, keen minds, and youthful spirits—of men he had known so well and so warmly.

The journey to Oxford was sentimental, but it was also concerned with the serious business of war research. Hovde met Conant and Wilson for talks with Oxford scientists and for visits to nearby laboratories and installations. While there, Conant came down with a sore throat, cold, and diarrhea and was put to bed. That meant Hovde and Wilson had to fill his shoes in the conferences with British officials about various projects and in the inspections of tests ranging from high explosive shell demonstrations to physiological testing, smoke bombs, and impregnation of clothing.

The Americans also visited several British aerodromes and met Air Marshal Sir Phillip Joubert, who was their host. "Joubert," wrote Hovde, "is a combination poet, gourmet, pilot, executive, leader, and charming gentleman." He also took time to note that a Joubert dinner menu nearly always included "champagne and 1906 brandy." Joubert invited the Americans to visit his headquarters in his staff car, but the English fog was so heavy that the group got lost and finally gave up. "It was an amusing situation," Hovde recalls, "to be with an air marshal who couldn't find one of his chief stations."
The nature of Hovde's job as liaison officer for NDRC was such that his days were filled with interminable meetings both in and out of London; trips of more than a day away from his office meant a desk piled high with paperwork when he returned. Meetings with English and American scientists were always a challenge and sometimes were not as smooth as he might have wished. He also depended upon Conant's great skills. One particular meeting with the British ordnance board brought this reaction: "J. B.'s absence was too bad, for it was a meeting with the wrong people present. I had the feeling that they didn't understand us or research and that their problems were beyond our scope. I have never been in such a difficult spot; my knowledge of these things is much too sketchy and will take months to learn."

Hovde got two bad pieces of news from Wilson at dinner on March 27: Conant was still sick abed in Salisbury, which meant postponing important meetings and getting Conant's decisions on crucial paperwork. Worse, he learned that the flat at No. 20 Grosvenor Square he had hoped to occupy had been requisitioned by the British army.

But two days later he found a seventh-floor flat at 40 Berkeley Square—"four bedrooms, a large living room, two baths, extra small dining room, excellent service, excellent location, good building," Hovde wrote to Priscilla. Hovde located Bayles, his shipboard friend, at the Dorchester Hotel; after looking at the flat together, they decided to take it at ten guineas (about $15) a week. On April 2, 1941, they moved in.

Working in the same building was Mavis Hume, a secretary in a London business office. A South African, she came to London to live with an aunt in Gordon Mansions after her parents died. Mavis and Bayles became constant companions in wartime London and eventually married in 1949.

Why were Hovde and Bayles able to get such a large flat for such low rent at a time when housing in London was next to impossible to find? In the London blitz, no one wanted to rent top floors of any building—"no one," explains Mavis Hume Bayles today, "except those two foolhardy Americans."

"Mavis is a jolly sort," Hovde wrote, "who has ordered all of our groceries for us and has been a general aide on
household problems Bill and I can't seem to find the time to bother with."

Both Miss Hume and Bayles were interesting people who had quick, cultivated minds, had adventured with life, and had many experiences to relate. Mavis was a cousin of Pamela and Bonita Hume, the widely-known English movie actresses. Bonita married Ronald Colman, an Englishman who was an American matinee idol.

Bayles's early career had been colorful and exciting. At one time he had been personally acquainted with the three top German leaders—Hitler, Goering, and Goebbels. After graduating from the University of West Virginia, Bayles earned his M.A. in English at Columbia University. He spent two years as an instructor there, then went to the University of Vienna and the University of Munich as an exchange instructor for two years. In 1934, he became Berlin correspondent for Time-Life and eventually wrote *Caesars in Goosestep*, the book which was highly critical of the rise of Nazi power.

In Berlin, Bayles got to know the Nazi hierarchy on a personal basis—he saw Nazi propaganda chief Joseph Goebbels every Tuesday on a standing basis. Bayles found Goebbels to be a fascinating person, "very cynical, very clever, very articulate." Bayles saw Hitler occasionally, too, including a weekend at the Hitler hideaway at Berchtesgarden. While Hitler seemed to him to be congenial on a face-to-face basis, Bayles pegged him as a madman. "Deutschland Uber Alles" was literal with him. It meant that Germany would one day rule the world; to most Germans, even at high levels, it simply meant that Germany would take its place as the "top" nation of the world, but not the only one. Hitler nicknamed Bayles "Mr. Moneymaker." "But, Mr. Chancellor," Bayles protested. "Me? A journalist? Why call me Mr. Moneymaker?"

"Because," Hitler beamed, "all Americans are moneymakers."

The Nazi hierarchy's power in Berlin contrasted sharply with the correspondent's observation of Hitler's beginnings in Munich, where Bayles said he felt, at the time, more pity than anything else. Hitler, the street-corner and beer-hall haranguer, was then a pathetic underdog with a meager following of ludicrous young bullies who called themselves the "Brownshirts."
Bayles and Hovde took great delight in reading to each other from a book they found on a shelf in their flat titled, *History of the American Rebellion*, the British view of the American Revolution which they found to be diametrically opposite to the schoolboy history they had learned.

Bayles and Hovde rarely discussed the details of the other's work. Bayles was busy writing dispatches on the London blitz, and Hovde didn't know, for example, that Bayles later was involved in intelligence activities he performed on behalf of Secretary of War Robert Patterson.

Likewise, Bayles respected the security measures that surrounded much of the scientific war research to which Hovde was privy. Bayles remained at 40 Berkeley Square after Hovde returned to the United States, but wound up the war on Iwo Jima in the Pacific. One of his interlude assignments was to help script a film about the Earl of Suffolk, the man who headed the British bomb disposal unit. Bayles had written a two-part series for the *Saturday Evening Post*, later condensed for the *Reader's Digest*, called "The Incredible Earl of Suffolk" which was to be made into a movie starring Cary Grant. While he spent time in Hollywood ostensibly in the scripting, he also assisted Frank Capra as a consultant for a series of American propaganda films, *Know Your Enemy*. So far as Bayles knows, the earl's story was either never filmed, or, if it was, never released.

Between them, Hovde and Bayles had many acquaintances and friends in London, or passing through on the way to the war. Their flat became a kind of general stopping-off place at one time or another for about everyone they knew; Bayles laughs when he recalls one night when fourteen persons crowded in to stay overnight.

Despite the peculiar warmth of the wartime camaraderie, Hovde had his emotional highs and lows. In one diary entry, commenting on a dinner conversation with friends and some British colleagues, he was impressed by the remarks of Sir Wilson Jameson, chief medical officer of the British Ministry of Health, that in wartime "everyone was nearer laughter and tears than ever before because emotion was the driving force in war." While psycho-neuroses were on the increase in the military, Jameson said, "it has disappeared from the civil population."

Hovde then commented in the same diary entry that "things are beginning to look up for us; the Yugoslav revo-
lution looks like a great break for England. Wavell's army is on its way to Greece. And we don't understand why Jerry has been so quiet—we haven't heard guns or air raiders for a week."

But in his next entry, "I felt low all evening, possibly because the mission has now reached the settling-down stage; the first flush of enthusiasm has worn off and we are now faced with all the routine difficulties of carrying on liaison work in this complex country of free and individual Englishmen."

The day Conant and Wilson were to return to the United States neared. Conant's illness and recovery took time and had slowed the work somewhat; therefore, the pace of learning as much as possible about the British scientific effort and determining what U.S. scientific capabilities could be useful quickened in the last days before departure. Hovde's own working day usually totaled nearly eighteen hours.

The entire mission staff gathered in its embassy offices on the morning of April 10, 1941, to help crystallize Conant's thinking for the comprehensive report he would make to Bush. "J. B." and Carroll Wilson were scheduled to leave that day for their return to Washington.

"I lunched with J. B. and Wilson at Grosvenor House, then they stopped by to pick up their pouch and say goodbye to Ambassador Winant and [Averill] Harriman . . . they got away at 1:15 and it was a sad goodbye." But, he noted, "I won my bet with Carroll Wilson. He didn't hear or see a bomb in six weeks."

Hovde worked until midnight the day Wilson and Conant departed for the United States, and at 3 a.m. the guns opened up again: "Such a racket I've never heard before. The building shook with the concussions, although I couldn't or didn't hear any bombs. I heard later that Coventry got it again; the planes were going over London on their way up and back. I don't mind saying that I shivered every time one of those beasts went off."

Hovde was now solely in charge of the London NDRC mission. Members of the mission staff who had joined it not long after Hovde, Wilson, and Conant arrived were also soon on their way home as others joined the London mission. That original group included Kenneth T. Bainbridge, the professor of physics from Harvard who early had been
involved in radar research and who later was assigned to the Manhattan Project; Ed Poitras, one of the most highly qualified engineers in the Office of Scientific Research and Development and an expert on fire-control problems and servomechanisms; and Warren Weaver, the mathematics professor from the University of Wisconsin, who did important operations research for the allies.

Hovde took the time to jot down in his London diary his own observations of life in that wartime city:

Food is very expensive at the hotels and leading restaurants but one need not starve with money. Families can buy only about one shilling's worth of meat per week, so they have a hard time with menus. Fish can be obtained, however. There is no fresh fruit but we can get canned fruit. Only one egg is served at a meal and only two small lumps of sugar with coffee, and you get only one exceedingly small pat of butter.

Liquor is both expensive and weak. The jiggers are the smallest I've ever seen. Substitute vermouths are used for martinis. Beer has gone up to 11 pence from 7 pence.

Cigarettes seem hard to get anywhere. The stores and tobacco shops only have a few packages on sale—often none at all. Cigars are prohibitive in price. J. B. almost threw a fit when he paid two shillings for the cheapest cigar in the hotel.

Transportation goes on practically normal. Buses run until 11 p.m.; the underground goes on in spite of air raid shelters. Trains are invariably late, for the traffic seems immensely heavy—lots of soldiers on them, of course. It is difficult to get real service on the trains since they are overworked, not kept clean and in good working order as they once were.

The streets and other services are repaired so rapidly after an air raid that no one is really inconvenienced for long. There is not enough damage in the West End [of London] to be really noticeable.

Newspapers are hard to get. One has to put in an order the night before to get a morning paper. The papers have been cut down in size until there's little left but headlines—and no news to speak of about America except the Lease-Lend Bill news and what the U.S.A. is planning to do to help. The British Ministry of Information doesn't give out much about the shipping losses these days so I can't tell whether lots of ships are being sunk or not. The articles about German raids are always lacking as to time and place for fear of giving the Germans some information.
Wilson says Portsmouth has really got a dosage of bombs and practically the whole center is laid out flat. He reported the naval docks OK, however. I fear these people do not realize the cumulative effects of the bombing, although I can well believe that little industrial damage has been done to England by and large.

The women of England are really in the thick of this war. One sees a high percentage of women on the streets, in the hotels, in service uniforms such as the WAAF, WATS, WRENS, ambulance units, etc. They have been given many army jobs to do, as well as peacetime industrial jobs. The RAF has a good many in such positions as clerks, desk officers, telephone and communication services, supply, food service, chauffeurs, etc. Teams of workers of both sexes have been found to be more efficient than teams of either sex alone. The RAF has set a fairly high standard of qualifications for accepting girls into this work.

As spring approached and winter waned, the London weather improved, and the Luftwaffe was able to step up its night raids. Simultaneously, Hovde’s embassy office workdays also got busier. As he wrote to Priscilla on April 21, 1941:

You may wonder what there is to do here, but it’s one sweet job to keep track of hundreds of reports, cables coming and going, expense accounts, tickets, reservations, trips for the members of the mission, committee meetings, diaries of members, conferences with men from at least six [British] ministries, talks with army and navy attaches who are interested in our work, passes, ration books, registration cards for members, telephone calls coming in constantly for Weaver, Poitras, Bainbridge, John Tate, and Louis B. Slichter. The only time one gets to make order out of chaos is at night when it’s quiet (except for the guns) in the office and on Saturday afternoon and Sunday. Everybody is grand and they all work like hell in the office to get the job done.

The same night he wrote to Priscilla, he and Bayles ate dinner at the Queen’s Brasserie in Leicester Square. It was the prelude to one of his most unusual experiences in London: “International Night” in a London bomb shelter. He recalls:

At 9:30, we went along to Hatchett’s Bar for a drink. It was pitch black and raining to boot when the alert sounded. Bill and I went down into a deep shelter under Austin Reed’s on Regent Street and had a good look at shelter life during a raid. The shelter was four stories underground, had a large
steel door at the entrance. The crowd in the anteroom was most heterogeneous. They were all sitting around talking and laughing and in the back were bunks where others were preparing for sleep in various costumes and stages of attire. We sat with the anteroom crowd for an hour and a half, laughing ourselves sick at them and with them. There were four French tarts in silver fox furs, an old French lady of 65, four cockney Englishmen who wisecracked continuously, several Poles, Czechs, a drunken Canadian soldier of 45 who had lost his helmet and respirator [gas mask], and a staid English couple who wished they weren't there, and a couple of Americans to make it a fantastic group. We stayed an hour and a half, watching the "show." The tarts were debating in vigorous French whether they would go up to work or buy a ticket for a bunk in the shelter. As Bill said, if they stayed it would probably be the first time they had ever paid for a bed themselves. The Canadian wanted to sing "My Wild Irish Rose" and to get to Maida Vale; the cockneys wanted to shut him up for the benefit of those who had retired and send him off to Maida Vale; the old French lady kept up a sunny conversation with everybody on the vulgar aspects of shelter life; and the Poles and Czechs argued with the tarts.

While the rather seamy humor pervaded underground, the raid above ground was one of the worst London had undergone. "We were home at 11:30 p.m.,” Hovde recalls. “I slept like a log although the next morning Bill said the guns kept at it occasionally until 2 a.m.” The raid that night was neither the first nor last Hovde experienced, although it may have been the most enjoyable.

He had been through one five days before that had begun as he and fellow NDRC staff members wound up dinner and an evening-long bull session in Warren Weaver's room at the Grosvenor House. Hovde wrote:

Just as we were breaking up, a high explosive bomb shook the hotel like a terrier shakes a rat. Two more went off nearby, rattling all of the doors and windows. With a single simultaneous thought, we all dashed for the lower lobby to wait out the blitz.

We hadn't thought much about it during the evening when several bombs rattled windows, but when these HE's shivered the whole hotel, we began to think about what was going on outside.

As we left our rooms, doors opened on the halls and persons in all stages of attire appeared, all bound for the lower decks. They were all ages, sizes, shapes, and in a varied array
of pajamas, dressing gowns, overcoats, and so on. The lower lobby was full of people so we went one more lower where we found seats. Jack Tate and I talked about Minnesota while the others dozed. Several bombs dropped in Hyde Park just opposite the hotel, one of them on a soldiers' barracks. The first one which hit at midnight was in Green Street, only two blocks away.

About 2 o'clock, I ran into Bruce Smith . . . during a lull when I came up to see if I could get home. The lift [elevator] man took us up to the eighth floor to see the fires. The Boche had dropped thousands of incendiaries, explosive incendiaries, and hundreds of HE's. From the eighth floor, we could see the horizon as a ring of fires. The incendiaries were dropped like rain, splashing sparks and shooting sharp greenish-blue flashes against the night sky. The colors of red, pink, black, green, and blue were beautiful but also horrible. The fires made an enormous red glow from north to south as far as we could see. Now and then, we would see "flaming onions" and star bombs and flares come down. The sky was filled with the constant drone of aircraft and the firecracker sparks of antiaircraft shells.

As we watched, we saw two gigantic explosions in the distance. Bricks, smoke, and dust went a thousand feet in the air in a great pillar. Diary, I was scared pea green! We all dropped the curtain and headed for the cellar again.

At about 4 a.m., Smith, Tate, and Hovde got some hot chocolate, then returned to the lobby. "All the windows in the front of the hotel were gone and it was cold," he wrote.

The all-clear sounded at 5 a.m. and I walked home, the streets everywhere were littered with shrapnel, stones, dust, and litter. You could hear everywhere the sirens of fire engines and ambulances.

I ran into a fireman at the corner near our place and asked how the battle was going. "Blast!" he gasped. "Why, I've been knocked down a dozen times by blast—this is the worst yet!" The streets began to fill with people as they came out of the shelters. Dawn approached and the sky was a beautiful blue-green with just a tinge of pink from the fires. Selfridges [department store] was burning as I came along Grosvenor Street.

When I got to our flat, I found our sitting room window broken. [It turned out later it was hit by a six-inch piece of steel.] A bomb fell just down a road near Berkeley Square. Bill was asleep, having watched the "show" from the roof. Piled into bed—set the alarm for 9 a.m. What a night. I shall never forget the sight of London burning and those explosions.
It was the longest day of Fred Hovde’s thirty-three years. “Diary,” he wrote the following day, “I don’t want to see it again!” And yet he did see it again in less than a month.

Though the bombs and fires had created the worst havoc he had ever experienced, as well as chaotic communications problems at his embassy office—not to mention that for two days he had found little time for sleeping and no water for bathing,—he took time to record: “The day was worthwhile because I got my first letter from home. It was grand. I’ve read it three times. Priscilla loves me and Boyd has been a standard bearer!”

Although Hovde had been in London since early March, nearly a month and a half passed before he received that first letter from home because of an uncanny series of foulups in overseas mail problems.

Hovde’s work increased in intensity and complexity. As the U.S. became more involved in defense research, he had to take his pleasures and brief periods of relaxation whenever they presented themselves. One of his favorites was visiting Tom Tanner and his parents at their huge country estate, Failand House, in the rolling hills about six miles from Bristol. He made three or four trips there with Tom during the months he headed NDRC’s London office.

When England entered the war in 1939, the Tanners, as devout Quakers, were religious objectors to it and consequently were subjected to what Hovde called “some difficult experiences.”

Prior to the U.S. entry into World War II, Hovde’s views would have been considered (using terminology of a later era) those of a “hawk,” and the Tanners’ beliefs those of the “dove.” Hovde noted various times that while he and Tom had divergent views on the war, “I held him in highest respect for the stand he took although we did not necessarily agree.” Even so, Tom Tanner’s peace stand strongly influenced Hovde.

Hovde’s daily activities in wartime London and the sojourns to Failand House seemed worlds apart. On a bright June Sunday morning, he soaked up the sun in the elaborate gardens of the estate, writing to Priscilla while the Tanners were at church:
The house and grounds are beautiful. Indeed, England is abloom these days and its peculiar, luscious greenery is as beautiful as I've ever seen it. After a month of rainy weather and cold we have had seven days of warming sunshine which has lifted the spirits of everyone. The mere change from London to the lovely country house and the calmness and kindness of Tom's parents have a profound effect on my well being and mental attitude. I feel refreshed and healthy again—a complete recovery from the ugliness of London in war and the essentially degrading nature of my work. Not degrading in its cause, which I believe in wholeheartedly, but in its essential or fundamental result which is destructive instead of constructive.

You would love Failand House and its garden—flowers galore, with the strange names I can never remember. Some day we must come here together to enjoy its beauty. Let us hope it will not be too far in the future.

Visits to Tanners were always occasions for golf for Fred Hovde, Tom, and his father at a nearby course. A neighbor of the Tanner's loaned Hovde a set of clubs, and Tom's dad gave him a pair of golf shoes manufactured in 1911. Hovde was an enthusiastic golfer, as was Tanner; thus, their matches were always great fun, as were their walks together through the fields and woods that were the setting for the Tanner home.

Even "get-a-way" weekends to Failand House were brought up short, and the ugliness of war intruded upon the pastoral setting. They stood on the porch of the immense home one evening to watch the Nazi bombers hit their hardest of the war at the midland cities. Shrapnel from exploded antiaircraft shells rained on the Failand lawns and ripped through the foliage of the trees. At times, it seemed as though any brief respite from the war was impossible for the British, even in the countryside.

Other favorite weekend jaunts for Hovde were his visits to Oxford and long chats with the Allens—Allen was then secretary of the Rhodes trustees—and to Boar's Hill to be with Sir Francis Wylie, the retired first secretary of the Rhodes Trust, and his wife, Lady Kathleen. (The Wylies always wrote brief but warm birthday greetings to their American Rhodes friends, a gesture Hovde always deeply appreciated.) He visited his favorite former Oxford colleague, H. W. "Tommie" Thompson, the young physical chemist assigned as tutor to Hovde when he prepared his
thesis for the B.Sc. in physical chemistry in 1932. Thompson became world famous for his work in infrared spectroscopy.

In one visit to his old laboratories, Hovde recalls a warm reunion where he "met all of the old gang"—among them not only Thompson, who later became a fellow of the Royal Society and was knighted, but John Wolfendon, a fellow at Exeter College in physical chemistry with whom Hovde also worked in scientific liaison. Wolfendon later became a professor at Dartmouth. Accompanied by Tom Tanner, he always delighted in his visits with Oliver and Barbara Franks. Barbara was Tom's sister and Oliver an Oxford don in philosophy (Queen's College). He had a meteoric rise in wartime British government, first with the Ministry of Supply because he was one of the best informed Britons on the internal labor situation in England, then in the British Foreign Service where he was assigned to U.S.-British relationships because of his familiarity with America and Americans. (Franks had lectured at the University of Chicago as a young man.) After the war, Franks became a top representative in the Marshall Plan, later was British ambassador to the United States, was knighted, and eventually became provost of Oxford's Worcester College.

One of Hovde's best-remembered events while in London was helping set the stage for the conferring of an honorary doctor of laws degree on Prime Minister Winston Churchill by the University of Rochester—a stroke of genius on the part of Alan Valentine, who enlisted his former assistant to make the London arrangements. Although Hovde had not met the prime minister, he had witnessed Churchill in action on two different occasions: at a Royal Society luncheon on March 18 and at the Pilgrims Lunch at the Savoy where the eloquent prime minister was at his best. "Churchill," wrote Hovde in his diary, "was superb. My throat ached and my eyes filled with tears at the power of his emotional appeal."

Hovde was, therefore, eager to assist in the arrangements for the Churchill honor at Rochester. The plan was this: the degree was to be conferred at the Rochester commencement on June 16 with Churchill accepting in a twelve-minute speech from No. 10 Downing Street by way of an NBC shortwave overseas radio hookup to the Univer-
sity of Rochester's Eastman Theater. Hovde had relayed several messages from Valentine to John Colville, Churchill's secretary, in the course of making the arrangements and was the emissary who delivered the citation which went with the honorary degree. Thus, he received an invitation to No. 10 Downing Street the day Churchill was to receive the degree and accept it. He and Fred Bate, London manager for the National Broadcasting Company, who had handled the broadcast details, had agreed to meet beforehand and knock on the door together.

Hovde tells the story in his London diary:

I left my office about 4:45 p.m. to clean up and put on a white shirt for the big show. I arrived at the entrance to No. 10 Downing Street about 5:20 p.m. Soldiers and police guard the barricade and pillboxes at the entrance to this short but famous street. After waiting until 5:35 p.m., Fred Bate had not yet showed up. I walked up to the guards, showed my credentials and rang the bell—there was trepidation in my heart. What would I do if I were refused entrance, if they didn't know me?

The very ordinary individual at the door knew who I was immediately when I told him my name. He took me down a hall to a little anteroom, red-carpeted, lined with bookshelves on one side, and a row of hooks on two sides. Over each hook was a place card bearing the titles of government officers. On each of the hooks were identical black Homburgs—the confusion engendered by the lack of identified hat hooks would be even too much for His Majesty's government.

In a wall cupboard, the radio equipment had been set up. At a small table were three chairs with headphones. Several people were present, including Bate who had come earlier, and a Dr. Lindemann. The others were not introduced.

Promptly at 5:44, Colville called the prime minister out of a Cabinet meeting and took him into the little office off the anteroom. Colville came back to sit with me and while listening over the phones, corrected the PM's manuscript as he spoke to the audience in Rochester. . . .

Churchill spoke one minute overtime, but he was so superb he could have taken another hour. Afterward, he came out to the anteroom, was introduced to me, or vice versa, then hustled back to his meeting. He looked to be in fine fettle with clear, unwrinkled skin and a vigorous, chunky physique.

After the prime minister disappeared, Colville took Bate, me, and Brendon Bracher, the prime minister's parliamentary secretary, down to the ground-floor living room for a glass of sherry.
The Hovde Years

University of Rochester's Eastman Theater. Hovde had relayed several messages from Valentine to John Colville, Churchill's secretary, in the course of making the arrangements and was the emissary who delivered the citation which went with the honorary degree. Thus, he received an invitation to No. 10 Downing Street the day Churchill was to receive the degree and accept it. He and Fred Bate, London manager for the National Broadcasting Company, who had handled the broadcast details, had agreed to meet beforehand and knock on the door together.

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Frederick L. Hovde at eight months with his father, grandmother Hovde, left, and great-grandmother Orson, right.

Mr. and Mrs. Martin R. Hovde, Hovde’s parents, as newlyweds in 1907.
A part of the Devils Lake Boy Scout Band during a visit to Glacier National Park. Hovde is third from left, front row.

Hovde's home at Devils Lake, North Dakota, where he lived from the age of five until he left for the University of Minnesota. (Photo was taken prior to the house's demolition in 1967.)

The Devils Lake High School football squad, 1924—which Hovde called "the best football team in the state." Hovde was quarterback of this team which won five and tied one. He is seated third from right, second row.
A part of the Devils Lake Boy Scout Band during a visit to Glacier National Park. Hovde is third from left, front row.

Hovde's home at Devils Lake, North Dakota, where he lived from the age of five until he left for the University of Minnesota. (Photo was taken prior to the house's demolition in 1967.)

The Devils Lake High School football squad, 1924—which Hovde called "the best football team in the state." Hovde was quarterback of this team which won five and tied one. He is seated third from right, second row.

Hovde in his Devils Lake High School graduation picture.

Hovde as a 1929 graduate of the University of Minnesota.

Hovde and Priscilla Boyd on their first date—the Bowery Party at the University of Minnesota, 1928. They married in 1933.

Below, Hovde (far right) in white tie and tails at the Junior Ball, 1928. As president of the Junior Ball Association, he led the Grand March with his date, Mary Symons. Other members of the dance committee included Harold E. "Red" Stassen, at far left.
Hovde, the all-Big Ten back, who won conference scoring honors in 1928 at the University of Minnesota.

Hovde also played forward on the Minnesota basketball team. His first visit to Purdue was in 1929 when Minnesota played Purdue in the Memorial Gym.

Hovde gains against Purdue in the 1928 Purdue-Minnesota game at Minneapolis. Minnesota won, 15-0, and Hovde scored on a fifty-one-yard pass play.
Hovde, the all-Big Ten back, who won conference scoring honors in 1928 at the University of Minnesota. Hovde also played forward on the Minnesota basketball team. His first visit to Purdue was in 1929 when Minnesota played Purdue in the Memorial Gym.

Hovde gains against Purdue in the 1928 Purdue-Minnesota game at Minneapolis. Minnesota won, 15-0, and Hovde scored on a fifty-one-yard pass play.

Hovde while a student at the University of Oxford where he was a Rhodes scholar in physical chemistry, 1929–32.

Hovde in his Oxford rugby uniform. He became only the third American in history to win his "blue" in rugby at Oxford.

Hovde and his close friend Malcolm MacIntyre toured Europe together and posed for this snapshot in the garden of the Casino at Monte Carlo.
A favorite vacation for Hovde was a visit to the Starnberger See in southern Germany for rest, study, and sailing jaunts with the Brüning family. From left are Hovde (in beret), Marjorie Brüning, Eleanor Brüning, and Malcolm MacIntyre.

In the Tyrols between Austria and Italy, Hovde, left, and Malcolm MacIntyre stand atop Steinachspitze on a day-long skiing trip.
A favorite vacation for Hovde was a visit to the Starnberger See in southern Germany for rest, study, and sailing jaunts with the Bruning family. From left are Hovde (in beret), Marjorie Bruning, Eleanor Bruning, and Malcolm MacIntyre.

In the Tyrols between Austria and Italy, Hovde, left, and Malcolm MacIntyre stand atop Steinacshpitz on a day-long skiing trip.

Priscilla Louise Boyd Hovde on her wedding day, August 23, 1933, at Minneapolis.

Four generations of Hovdes, 1934. From left are great-grandfather John E. Hovde, grandfather Martin R. Hovde, father Frederick L. Hovde, and son F. Boyd Hovde, who was then less than a year old.
Mrs. Hovde and the Hovde children in a photo in front of their home on Thirty-first Street Northwest in wartime Washington. Boyd is at left and Jane at right. Mrs. Hovde holds their “newest,” Linda. Fred snapped this picture on July 1, 1945.

Hovde, center, at ceremonies decommissioning the Allegheny Ballistics Laboratory, October 4, 1945. At the microphone is Vannevar Bush, who headed the nation’s wartime scientific research efforts. Hovde headed Division Three (rocket ordnance) of the Office of Scientific Research and Development. At left is R. E. Gibson, director of the World War II Laboratory in western Maryland.
Churchill's living room was small, shelf-lined, a few easy chairs and a fireplace. The windows were steel-shuttered and looked out into the little garden behind 10 Downing Street. Several large beams obstructed the freedom of the room, having been added to shore up the room for safety.

In one book shelf were a number of photographs of Churchill's family. There also was framed the famous FDR letter to him carried to England by Wendell Willkie...the letter which contained Whitman's quotation, "Sail On, Oh Thou Ship of State!" Characteristically, the prime minister replied with poetry, quoting in an answering speech the words, "Look Westwards—see the land is bright."

• • •

Though few of his London adventures rank with his visit to No. 10 Downing Street, there were others: for example, he noted that on May 2 he had eaten his first fresh orange since leaving the United States—an event that, for an American in England coping with food shortages hardly imagined in the United States, nearly equaled meeting the British prime minister.

Another interesting pastime for Hovde was his lunch-con visits to the P.E.P. Club (for Political, Economic Planning), a group of free-thinking, liberal, mostly far-left-leaning intelligentsia. The day after he and Bayles moved into 40 Berkeley Square, Tom Tanner took them both to their first P.E.P. luncheon to hear Sir John Reith expound on reconstruction. Hovde, regardless of his own political and economic philosophy, found the expression of new ideas—and the way they were expressed—fascinating. Tanner and Hovde attended again on May 7, and at lunch Hovde sat across from Julian Huxley, that great advocate of liberal causes who became the first director-general of UNESCO after the war. In the spring of 1941, Huxley was one of the signers of a commentary of the so-called Committee of 1941 whose byword was "the people must be worthy of victory; the victory must be worthy of the people," a call for a rebuilding of the social order at the end of hostilities.

Huxley was an unusual individual of whom his own grandfather once said, "I like that chap. I like the way he looks you right in the face and disobeys you." A king's scholar at Eton, Huxley was a biologist, scholar, and author. He had been a research associate at Rice Institute in Hous-
ton and attended Oxford (Balliol College). He advocated scientific humanism as a substitute for "the mysticism of the past." The biologist, he believed, had special knowledge of the uniqueness of man which provided the best basis for creating a new social order.

One of Huxley's first publications was in the mid-1920s under the title, *Man Stands Alone* ("... in that strange, restless, indecisive period in which an age was dying, but most of us [refuse] to face the imminence of its dissolution."). Hovde loved such style of intellectual stimulation of the P.E.P. Club lunches and was inducted an honorary member of the group on December 24, 1941.

At one P.E.P. lunch, Hovde sat to the right of an Englishwoman, and they discussed the American method of rearing children. "She made the interesting observation," Hovde noted, "that American children were simply awful, yet American men were so polite and charming. How was the transition made?"

Another memorable event was the first meal Hovde prepared for himself at 40 Berkeley—an adventuresome menu of baked beans, bacon, eggs, tea, milk, and rolls.

Sugar was practically impossible to obtain and Hovde soon learned to drink coffee without it, although Priscilla regularly sent him small quantities. Scarcities of day-to-day items which were normally taken for granted began to loom large. When the elbow of one of his suits wore out, it was not a simple matter of a casual replacement but rather a near-crisis situation.

Maintenance of one's wardrobe in wartime London was always a problem and Hovde found that the rigors of his job played havoc also with his hat, which became worn and badly fingered. He searched the London shops for a new one and finally settled on a gray homburg. Not normally a self-conscious person, Hovde had second thoughts about it after he got it back to his flat. For an unpretentious man, was not a homburg just a bit pretentious? "It took me two days to get enough courage to wear it to the office," he told his diary. "Disappointingly enough, nobody noticed it at all and I didn't get kidded by anyone."

He also complained about British laundry treatment of his silk socks—"they ruin them"—and noted that the same laundry had lost several of his shirts and underwear in a fire, whether an "ordinary" fire or one set by German incendiary bombs is not clear. But the laundry refused to take
responsibility. I guess I'll just have to go out and try to find some more," Hovde lamented.

Social life and fellowship for Hovde in blitzed London was carried on in simple, unsophisticated ways, such as the birthday party at 40 Berkeley Square for Tom Tanner. The party was highlighted by a cake sent from his American wife, Dora, who stayed in the United States throughout the war, and was attended by Ann Channer, June Spencer, and Patience Clifford—three of Tanner’s ambulance drivers—and Peter Fleming, a Quaker accountant who gave up a top, high-paying position to join Tanner’s volunteer ambulance unit.

“The pièce de résistance was Dora’s cake,” Hovde wrote to Priscilla. “The girls made tea and about 9 p.m. Ann and Patience made a dinner of baked beans, eggs, cheese, and bacon. They cleaned out our icebox which was a good thing. They mixed it all together into a superb concoction.”

Bayles recalls the cook who went with their flat at 40 Berkeley Square, “a Scotswoman from the Outer Hebrides named Mrs. MacKenzie, who was the coldest thing between Glasgow and the Arctic Circle.” Mrs. MacKenzie, Bayles remembers, took unsolicited interest in the welfare of women visitors to 40 Berkeley Square, invariably warning them that their male companions “do not have the best intentions and will never marry you.”

Hovde met many women in London and invariably he spoke graciously of them, but as he wrote in his diary, he had little interest in them. Too, the manner of the English woman was perplexing to him: “These girls are nice enough but, Lord, give me Priscilla. She’s got more stuff in her little finger than all of them when it comes to savoir faire, ease of conversation, joie de vivre or what have you. They nonplus me. I can’t tell whether they are having a good time or not. It’s hard to chat with them. I guess I’ve lost my touch, or Pris is too much on my mind and in my thoughts.”

Yet, he seemed to enjoy their fellowship many times. On one occasion, Hovde and Tanner took Ann Channer and June Spencer to dinner at the Mirabelle, later returning with them to their ambulance station just across the street from the bank of the Thames. Five or six other women ambulance drivers were also there. “They were an interesting group of girls, all of them well educated, well born, and charming, so we had lots of fun talking about every-
thing. Actually it was one of the most interesting evenings I've spent in London. We all composed a letter to Adolf Hitler, put it in a bottle and tossed it in the river," Hovde wrote. "It was one of those evenings that just eventuate and prove to be more fun than anticipated."

Hovde made frequent diary entries of his after-hour activities—with whom he ate lunch or a late-hour meal, an evening of dinner and bridge at friends' homes, or with whom he did some occasional pub-crawling. Most often the latter was with Tanner, but he mentioned the time he and Bayles crashed the Coconut Grove, a private club, on the pretense of "observing nightlife in the London blitz for Life magazine." The head waiter got them a front table, a bottle of Scotch, and an honorary membership.

Another night, he was in a London supper club with Bill, Mavis, and George B. Kistiakowsky, a Russian-born, Harvard chemistry professor with a sparkling personality, a man whom Hovde greatly admired. ("Kisty is marvelous company—full of good, common horse sense, much humor, and lots of knowledge. His background is continental and cosmopolitan. Yet, he is pure American," Hovde wrote in his diary.)

Kiev, Kistiakowsky's birthplace, had that day fallen to the Germans, and he therefore decided to get very drunk. Bayles joined him and that, remembers Mavis, "left Fred free to dance with me most of the evening—and he was a very good dancer."

But for all of that, he found the need for solitude, to be alone with his thoughts as he wrote letters to Priscilla and Boyd, his friends and family. Often he would read (mostly mysteries), and one diary entry says simply, "after supper I returned to the flat alone and read myself to sleep over Bulldog Drummond." Another entry refers to eating alone at a hotel, to which he added, "I spent the evening chatting with the hotel desk clerk." Evenings in London most often found him in his embassy office, wading through the pile of paperwork which seemed to grow nearly as fast as he could reduce it. "Another day of paperwork," he once wrote to Priscilla. "The amount of national defense we are doing on paper is enormous. If all of the paper that is used to write reports was dropped on Germany there would be no need to drop any bombs."

Steak had all but disappeared from the city's restaurant menus; thus, when he found a place that had it, he nearly
always ordered it—and enjoyed it “even when it was like
the bottom of my shoe.” But in typical Hovde manner, he
was mostly complimentary of the food in London eateries,
taking into consideration its scarcity and the conditions
under which it was prepared and served. He complained
only when it was outlandishly bad and then only in his let-
ters home.

His favorite dining spot was the Connaught Hotel,
which he considered to have the best food in London dur­
ing the war. Another was the LaCoquille which displayed
this sign prominently but with typical British imperturbability:

La Coquille will stay open unless a bomb
falls on the building

Frank D. Lewis, a young MIT scientist, arrived at the
London NDRC mission office in mid-May to become asso­
ciate technical aide and Hovde’s valued assistant. His arrival
coincided with one of the heaviest incendiary raids yet on
London. He roomed at the Cumberland Hotel several days
then agreed to move into 40 Berkeley Square with Hovde
and Bayles, thereby cutting living expenses for all three.

On the night Lewis arrived, he and Hovde dined at the
Cumberland. Hovde returned to the flat about 11:30 p.m.
as the sirens went off. Ten minutes later, Bill Bayles and
Mavis Hume scurried in from the International Club and
Mavis had to stay overnight; there was no possibility of her
getting home during the raid. Hovde spent most of the
night in the ground floor lobby of the building and asked
frantic ARP staff members who were desperately putting
out nearby fires whether he could help. He was politely told
to stay out of the way, so he spent most of the evening talk­
ing to a war office captain “whose whiskey breath nearly
knocked me down.”

The next morning, Bayles and Hovde, escorting Mavis
home, picked their way through the rubble when Bill sud­
denly spied an exploded incendiary bomb and picked it up.
“Twist the tail off,” Hovde suggested casually. “That’s usu­
ally where they’re booby-trapped.” Bayles dropped it like a
hot potato—which in one sense it really was.

Hovde was constantly amazed at how the British,
throughout the devastating German air raids, managed to
restore order so quickly. To them, the raids were somehow
inconvenient but not necessarily catastrophic, though death
was everywhere. Rare was the Londoner who did not have a friend, relative, or acquaintance either killed or mortally injured in the blitz. Yet, the English managed to keep their stores and shops open, apologizing to visitors for the inconveniences the raids caused. The morning after one incendiary raid virtually destroyed its top floor, Selfridge’s department store somehow opened for business, perhaps illustrating Hovde’s point about British indomina-bility.

Hovde seemed to thrive on the challenges inherent in maintaining and expanding the channels which permitted free flow of scientific information among and between American and British researchers. And he had plenty of friends and colleagues to keep him company. Yet, he began to wear under the strain of the prolonged absence from his young family.

The excitement of long and interesting conferences with such important people as W. Averill Harriman, head of another American mission in London (“Harriman is a better man than I thought at first, but he’s not the world’s best dictation-giver”) and Anthony J. Drexel Biddle, Jr., U.S. ambassador to the governments-in-exile in London, (“the old smoothie ambassador”) could not overcome his growing and persistent longing to return home. He finally admitted to a certain weariness of spirit in a June letter to Priscilla: “The complete abnormality of this life compared to our normal happy existence is beginning to become trying on my spirit... it won’t be long now until I’m home.”

What lay ahead at home? The Frederick L. Hovde family was about to expand, a fact Hovde knew before he had left for Europe. But he fully expected to have completed his tasks and returned to the United States in time to greet the new arrival in Minneapolis. So certain were the Hovdes that it would be a girl that the expectant parents always referred to “Boyd’s sister.”

“I’ll be home in August because Carroll Wilson promised me the return,” Hovde reassured Priscilla in another June letter. “Only a declaration of war would prevent it and perhaps that won’t be enough. So be of good cheer,” he wrote.

As he had been promised, Hovde got a leave at the end of his first six months in England and on August 20, 1941, returned to the United States aboard a ferry bomber in
ten-hour jumps from England to Iceland, to Goose Bay, Labrador, thence to Washington. After several days' business in Washington, he raced to Minneapolis for his long-awaited reunion with Priscilla and Boyd—a reunion keenly anticipated since February 15, the day he departed for England. He and Priscilla had tried to make arrangements for his leave to coincide with the arrival of "Boyd's sister." His timing could not have been better. Boyd's sister, Jane, arrived at Abbott Hospital in Minneapolis on September 17, 1941.

His leave from London, as joyous as their reunion was and as happy as the young Hovdes were with the birth of their daughter, was also a hectic time. It involved moving Priscilla and the children from a small rented house in Minneapolis to another house in Saint Paul to be nearer her family. In addition, Hovde was asked to make speeches locally about his experiences overseas.

At times Hovde expressed great impatience with the isolationist viewpoint of many Americans. He could not comprehend that in 1940 and 1941, with the United States on a collision course with war, that isolationism could be so rampant, especially in the Midwest. Not many American civilians had been as close to the war in Europe as he had in the year preceding Pearl Harbor; not many U.S. citizens had the firsthand knowledge that he had of what was happening on the other side of the Atlantic. Hovde was a patriot; he was quiet about it, yet did not hesitate to forthrightly state his beliefs.

In one letter early in August, just before returning on leave, and after receiving a rather impatient letter from Priscilla suggesting that he was perhaps more interested in his London work than in coming home, Hovde wrote one of the few really personal, emotional, forceful responses that appear in his London correspondence:

I'm not a flag-waver, but I believe in discharging my responsibilities as a thinking citizen. If the Nazis win this struggle we shall live under an awful shadow the rest of our lives. Freedom as we know it in America will never be the same—our happiness as well as that of millions of families like ours is well worth doing our little bit to preserve even if it means the temporary sacrifice of the pleasures of our wonderful life together. . . .

I don't want much from this life—only to grow old somewhat gracefully with you (and our family). While doing that I want to hold my head up always in front of my
neighbors, my co-workers, and my colleagues in my job. I want to do my job well, discharge what I believe to be my responsibilities as a citizen. I want to live with myself as well as with you. Not only that, but a man has a right to expect that his love will help him do those things, those simple fundamental things which make for real happiness.

I just can't let Dr. Bush and Dr. Conant down when this job over here needs doing—and its something I started and I could never hold my head up again if I don't finish it, and finish it in grand style. . . .

Priscilla was deeply saddened by a prospect she had not counted on. Originally, Hovde's arrangement was to serve six months with the scientific liaison mission in London. But the job soon became so significant and Hovde so important to it that he was requested to stay in London possibly for a year or more.

The leave gave Priscilla and Fred opportunity to reconcile themselves to additional months of overseas separation, and Bush promised Fred that if a replacement could be found by February of 1942 he then could return for reassignment in Washington.

Business trips between Minneapolis and Washington—one of them by way of Rochester, New York, for a resounding reunion with the Hovdes' many friends there—further brightened the leave; and after four days together in Washington, Priscilla and Fred parted at midnight on October 22 as he boarded a train for New York to take a Pan American Clipper for Lisbon, where, he hoped, a high priority for the return flight into England would await him.

Before leaving, he was handed a letter signed by Frank B. Jewett making him the representative of the National Academy of Sciences and National Research Council and empowering him to obtain information on their behalf for defense research in which they were engaged. But another letter he carried had by far greater implications and profoundly historical consequences.

Bad weather delayed the flight at Bermuda, but it arrived at Lisbon about midday on October 23. There, Hovde found to his dismay that he was in for at least a week's stay; the British legation gave him the news that at least eighty others with priorities as high as his were ahead of him for flights to Bristol.

The good side of that situation was the opportunity he had for needed rest. The beaches and hills around Estoril
again beckoned, and during his week of waiting, he took long walks and sunned. Other hours were filled with letter-writing home, visits to the American and British legations to try to speed his return to England, late dinners, and sessions at the Estoril roulette tables—where he eventually won enough to cover his week’s hotel bill.

On November 1, after a rough, low-altitude flight from Lisbon, Hovde arrived back at Bristol and entrained for London to be greeted at Paddington Station by Mavis Hume, Bill Bayles, and Frank Lewis. “We deposited my luggage at 40 Berkeley Square, then went to the Deanery for a welcoming dinner. I was also officially welcomed by the sounding of the sirens at 10 p.m. and a few guns saluted just to show their regard for my arrival,” he wrote in his diary.

Hovde found his embassy desk piled high with work. The tempo and volume of work at the NDRC liaison office had stepped up while the number of staff either had remained constant or been reduced. Hovde’s repeated pleas to Washington for more staff assistance seemed to fall on deaf ears, and while he quietly fumed about that situation, he praised highly Frank Lewis, his assistant, and Bill Olive, George Mercer, and Art Jackson, the three secretaries in the office without whom, he often said, “this whole thing would collapse.”

Adding to the increased workload as well as to his frustration was a cutback in the frequency of transportation and communication between the United States and England. Caused by logistics problems, the cutback intensified the difficulty in exchanging the increased volume of scientific information that the liaison was creating and handling.

A constant irritation to Hovde was that of the several nations which had scientific liaison officers in England, the most technically active country of all—the United States—had the smallest staff. A nagging cold that he could not get rid of because of the wet and penetrating British winter, on top of the other problems and the paperwork-without-end he found on his return, did nothing good for the Hovde disposition. “The presence of about seven missioners [scientists from the United States in England] makes the office a bedlam and getting caught up with events has been a trying experience. Evidently, Frank and the boys had had their hands full,” he wrote in part. “They were happy to see me back.”
Despite the problems, Hovde was happy to learn that the U.S. embassy commissary now was in full operation; he and Frank Lewis “gloated over all of the delicacies” they found in their supplies in a country of food shortages. “We laughed at some of the foolish orders—a gallon of maple syrup and no pancake flour to go with it. That should easily last us a year,” Hovde wrote in his diary. “Many of our extra supplies will make excellent Christmas presents for our English friends.”

Hovde found London darker and drearier than when he had left in August and a change in the mood of Englishmen for whom the war was not going well. Though the opening of the Libyan campaign against Rommel buoyed English spirits, Hovde was not overly impressed: “It opened and started with a great blast of confidence, with fantastic claims of miles covered and tanks destroyed and so on,” Hovde wrote in one letter. “But the first thing we know, the newspaper accounts will tell us the whole battle will develop into a stalemate and all the premature hopes and confidence of the poor newspaper readers will be dashed. . . . All our American stuff gets far too much praise and publicity—I believe the praise of our material is a deliberate policy and perhaps it is wise—but anyone with any sense knows that our material is just like all other stuff; some is good, some is mediocre and some is bad.”

Among other American “products” which Hovde held in disdain were three junketing congressmen, two from Colorado. Hovde had personally arranged with his friends, Tom Tanner and Dick Symonds, a visit for the congressmen through the East End shelters and inspection of volunteer ambulance units and facilities.

“[The congressmen] again cancelled the trip which was very embarrassing to me because I asked Dick and Tom to arrange it and Dick had already wasted two nights waiting for them to show up,” Hovde told Priscilla in one of his weekly letters. A day later, Hovde went for the third time to pick up the congressmen for the East End tour. “One of them was ready but one of them was tight and wouldn’t go along. I shall never go out of my way again to be helpful to congressmen.” After the tour, Hovde, Symonds, and the congressman returned to the Ritz Hotel to the “congressman’s palatial room” for a drink. While there, the other two congressmen came in—“two asses of the first water,” Hovde observed. “They were bombastic, foolish, and
with not a single admirable quality that I could see. These visiting congressmen just come for the ride; they have been entertained beyond all reason, have lived like kings, and seen nothing. Their statements in the papers when they left London were completely silly. There’s a war on here and these people [the English] aren’t inmates of a zoo to be gaped at for pleasure, especially by silly, isolationist congressmen.”

“I walked home from the Ritz,” Hovde wrote home, “in a completely ugly frame of mind.”

• • •

Sunday morning, December 7, 1941, as the Japanese attacked the United States at Pearl Harbor, Frederick L. Hovde, chief of the London liaison office of the U.S. National Defense Research Committee, was “freezing to death in the Hotel Grosvenor, a summer resort on the south coast of England at Swanage, Dorset.” He had gone there by train with Lewis to visit a nearby British defense establishment.

“We have just heard that 9 o’clock news broadcast in which it was announced that FDR just had announced Japanese attacks on Hawaii and Manila,” Hovde wrote to his wife. “No more was said but that means the war has started for us—where it will end no one knows.” But at that time, Hovde was puzzled about why the Japanese chose to attack the United States at Hawaii and opined that “the treachery of the Japanese, talking peace and sending envoys to Washington while they were getting ready to strike, is illustrative of the difference between a dictatorship and a democracy.”

Like many others, he was at that moment uncertain about what was to happen next, but his characteristic wisdom and perception came through in this sentence in his December 7 letter to Priscilla: “The next few days will tell the story and until it’s known I’m not going to speculate because simple people are always wrong when they try to foresee the future, especially where madmen are concerned.”

Although he worried at first about the possibility that Pearl Harbor might result in his being stationed in London for the duration, he was soon relieved to learn that he would return to the United States for a new assignment as soon as his replacement could be found.

Hovde and his overworked staff plodded wearily ahead as their job expanded with the growth of NDRC activities.
In his 1942 letters home, he began to make off-hand references to the liaison office as the “insane asylum,” “madhouse,” “salt mine,” and “bedlam.”

“The work here,” he wrote, “has expanded to such great dimensions that all of us are weary from overwork—none of us gets the great kick out of our work that we did during the first six months. I don’t mean that it has lost anything in the way of importance; on the contrary, it has gained in importance now. We slog along and do our best under the conditions, but none of us can any longer approach the mountains of stuff on our desks with spirit and verve. I’ve been trying for two months to get authorization to hire some British office personnel, but I can get no action from the Washington office. I sent Frank Lewis back with definite instructions to get us enough staff to do our work properly. I hope he can put our needs across.”

In England, Hovde had developed insights into the wartime scientific effort far beyond those of almost any other Americans save Conant and Bush. He was not only close to the scientific developments but was involved in several manpower programs which brought trained Americans to England to assist in operation of war hardware. One of the programs, recruiting and training American ham radio operators to man new radar and communications equipment, had been Hovde’s own brainchild. He suggested it in an American-British manpower conference attended by Harriman, Harry L. Hopkins—FDR’s alter ego—and such British labor luminaries as Ernest Bevan. The meeting was going badly; the information Hopkins needed just wasn’t there. Homework had not been done; no precise information on needs or approaches was available. Then Hovde suggested that the training period needed by ham radio operators could be shortened because they were well-versed in radio technology and operation to begin with.

After the meeting, Hopkins invited Hovde to ride back to the embassy in his limousine with him and Harriman and to present his proposal. Hovde felt good about the episode and was especially thrilled by Hopkins’s accolade, “Now that’s what I came here to find out.”

The longer Hovde was in London the more the top English scientific and government people relied on his advice and suggestions. He began to find himself in high echelon discussions with officials on matters over which he not only had no authority, but on which he hesitated to even
offer opinions for fear that they might be interpreted as U.S. policy.

But for all of that he developed close and respected relationships with many brilliant British scientists whom he greatly admired and no doubt tried to emulate. He also was recognized for his great abilities by his American colleagues. Ambassador Winant frequently asked him for advice, as did Harriman.

He had a special feeling about English scientists—some of whom were friends and acquaintances from his days as a chemistry student at Oxford. His letters from London mentioned scores of British names, and to many of these he was highly complimentary: Lord Hankey; Sir John Anderson, lord president of the British Scientific Advisory Council; Lord Cherwell, the former Oxford physicist who was Churchill’s chief scientific adviser; Air Marshal Joubert; Sir Henry Tizard of the Air Council, the man who headed the first British mission on scientific interchange to Washington; Professor Hill, the secretary of the Royal Society and member of Parliament; Prof. J. D. Pratt, chairman of the Chemical Defense Board; Sir Frank E. Smith of the Ministry of Aircraft Production; and Sir Edward Appleton of the Department of Scientific and Industrial Research (DSIR).

He particularly admired Prof. J. D. Cockroft of the Ministry of Supply, the noted Cambridge physicist who pioneered some of the fundamental research on radar and later in atomic physics. (“Cockroft is tops in knowledge and ability and absorbs things about as quick as any man I’ve ever met.”) Hovde, Cockroft, and Prof. R. H. Fowler, also of Cambridge University, a scientist “on loan” to the DSIR, spent many hours together on problems of great and grave importance to both countries.

“I have met and talked with great numbers of English scientists engaged directly in war work of one kind or another,” Hovde wrote in a letter to his parents at Minneapolis.

I have the greatest admiration for the quality and speed of their work under war conditions, lack of equipment, lack of laboratory manpower, and the immense amount of time they spend in the plethora of committee meetings they must attend. If our gang at home can do as well I shall be well satisfied.

Behind the scenes here as well as in the United States, the usual battle goes on between the academic scientist and the
civil servant scientist. . . . It has been truly said that the last
war was a chemist's war and that this war is a physicist's war.
The acceptance of the scientist on the part of the armed
forces here is a development of first-rate importance. Better
weapons of war can only be produced by enlisting the best
scientists and technicians and engineers, giving them full
cooperation and help of the people who know military opera-
tions. How long it will take the United States to learn this les-
son will directly affect the duration of this conflict.

In February, 1942, Wilson informed both Fred and
Priscilla that a replacement had been found for him in
London. The news gave them both new life and new spirit,
and they looked forward to resuming their life together as a
family, each pledging that never again would there be such
a long separation. Yet, the momentum of the job was such
that three more months went by before he was actually able
to get out from under it and leave England.

It was also in February, 1942, that Hovde, on a visit to
Oxford, was able to take his Master of Arts degree—in
Oxonian academics a process that boils down simply to
keeping your name on the Oxford books and paying annual
dues. In Hovde’s case, he had removed his name when he
left in 1932 since he hadn’t felt able to pay annual dues. But
he restored his name to the books by paying thirty-seven
pounds, four shillings.

His replacement as secretary of the NDRC London
mission office was Bennett Archambault, a native Califor-
nian who had studied at the Georgia Institute of Technol-
ogy and got his degree at the Massachusetts Institute of
Technology. After the war, Archambault became vice-pres-
ident and general manager of the M. W. Kellogg Corpora-
tion, then president and later chairman of the board of
Stewart-Warner Corporation.

Archambault got a “cram course” in Washington, then
was dispatched to London to work alongside Hovde several
weeks before Hovde returned to the United States. He also
took over as flatmate with Bill Bayles and Frank Lewis at 40
Berkeley Square.

Hovde had known as early as mid-March that he prob-
abley would be named as assistant to Conant upon his return
to Washington. That was good news, too, for his admiration
for J. B. was unbounded.

With Archambault briefed and acquainted with his new
job and final details wound up, Hovde was able to say good-
bye to a great many people of whom he had become very fond. His goodbye to Tom Tanner, the great, rugged Quaker—so gentle, so affectionate, so alive—became a final farewell. Less than a year later at Washington, Hovde was deeply saddened by this letter from Tanner’s father:

Dear Fred,

I think you may not have heard about Tom. He left this country towards the end of March by sea to Durban, which was to be his first call on a long trip to Egypt, India, China, and other places.

His ship has been lost at sea by enemy action, with no survivors and we fear there is no hope—or hardly any—that he was or will be rescued.

Yours sincerely,
Herbert G. Tanner

His work in London was done. The adventure ended as he flew to Lisbon to board a Pan American Clipper for the flight home. He arrived at LaGuardia Field on May 6, 1942, to open a new chapter in his wartime life.

Not long afterward, Bush approved the following memorandum from Conant:

I should like very much to have Mr. F. L. Hovde, who has just returned from England, assigned to my office as Technical Aide to the Chairman of NDRC. It would be my idea to give him the additional title of Executive Assistant to the Chairman. Until July 1 this title is being carried by Dr. King who is kindly acting on a part-time basis for me.

I think that Mr. Hovde will need a month to take a vacation and unburden himself of the messages he has from England. Perhaps to this end he could visit the various section chairmen and kill two birds with one stone—namely report on England and make himself known as a future member of my staff.

J. B. C.

The Hovdes moved to Washington, renting a house on Thirty-first Street Northwest. They underwent the usual minor traumas associated with getting their new house in order—small plumbing repairs, a screen door installed, a gas range needing attention—even a note from the landlord asking them to keep the “rather expensive rose bushes” properly dusted. But all of these seemed inconsequential
compared to the joy of their family reunion—the making of a home once again—and Hovde's new challenge in the NDRC.

And there was delight in the addition to the young Hovde family of Linda Ruth, born September 7, 1944, in Washington. The attending physician was a prominent Washington obstetrician named Dr. James Dusbabek, who, Hovde recalls, "was a kid I had known who worked in a drugstore back in Devils Lake." While in the hospital, Priscilla became acquainted with Mrs. Hopkins, a volunteer Gray Lady in attendance on the obstetrics ward. Mrs. Hopkins was the wife of Harry L. Hopkins, President Roosevelt's chief White House aide, who had been so impressed with Hovde's London work more than two years before.

In his new job, Hovde found himself submerged in a complex job: keeping track of a growing research and development effort and the thousands of organizational problems that went with it. Priscilla spent full time maintaining some semblance of household normalcy for a young family in abnormal, wartime Washington.

Even though he lived by the clock and maintained a demanding work schedule, Hovde always found time for his youngsters, especially Boyd. On one occasion, so goes one story, his son impressed upon him the fact that the years seem to speed by at an exponential pace. After school one day, young Boyd and his neighborhood gang went off down the street for football. "I'll come out and give you some pointers," Hovde told the group of boys as they departed. "Like what?" Boyd asked suspiciously.

"Might even show you how the old 'Statue of Liberty' works," his dad offered solemnly.

"That old stuff?" the ten-year-old scoffed. "That's ancient history."

Roosevelt had made a sudden decision in 1943 to extend the field of Bush's activities to include research in military medicine and issued an executive order creating the Office of Scientific Research and Development (OSRD) and greatly enhancing the powers of its director. The NDRC and the newly created Committee on Medical Research (CMR) were made advisory bodies, reporting to Bush. Conant took Bush's place as chairman of NDRC, and Roger
Adams of the University of Illinois relieved Conant as chairman of NDRC's Division B and became a member of the committee. A. N. Richards of the University of Pennsylvania was named chairman of the CMR.

As head of NDRC activities, Conant considered Hovde "indispensable"—the word he used in a strong letter to Hovde's draft board in Rochester, which had considered a new draft classification for him after he returned to the United States. Conant was not only impressed by Hovde from his own experience and observation of Hovde's performance and versatile capacities but also had received glowing accounts of Hovde's work in London from the top British scientific, military, and civil government officials, people with whom Hovde had dealt in an official capacity and had become friends.

Conant paid Hovde by placing great confidence and trust in him and perhaps simultaneously penalized him by handing him enough work for three men. Hovde found himself suddenly faced with the awesome task of day-to-day coordination of NDRC's far-flung and diverse sections and divisions, all of them working on important problems dealing primarily with weapons and other instrumentalities of war.

At the time, Conant dealt with two other important problems, one of them (as Hovde punned in a letter to NDRC colleagues in London) "pursuing the critical question of how far the U.S. rubber supply will stretch." Rubber supply was, however, no laughing matter; the principal Far East sources of natural rubber had been shut off. For a nation whose armed forces ran on wheels, it was a formidable problem and demanded Conant's nearly undivided attention.

The other, far more profound problem Conant became deeply involved in was organizing the atomic bomb development project—later separated from OSRD and placed under the Corps of Engineers and known best as the Manhattan Project—under conditions of total secrecy.

As executive assistant, Hovde was not involved officially in either the rubber problem or the atomic bomb project (although a trio of experiences involving Hovde with the A-bomb add up to an uncanny coincidence). Having been given practical responsibility by Conant for the ongoing research and development programs, Hovde soon found himself dealing with all of the real problems of bridging the gap
between civilian research and development and the military. Hovde explains:

The divisions and teams of the NDRC were all civilian in nature. Most of the contract groups were managed by universities, others by industries. When a particular development reached the stage where testing had to take place, the army, navy, and air corps had to assign liaison officers, had to find bases and facilities for the testing work. Many of the programs, because they were civilian, found difficulties placed in their way by the military people who were, of course, naturally preoccupied with their existing machine and getting it ready to fight. They couldn't be slowed up and delayed by the promise of something better to fight with later on.

But it turned out later, in my judgment at any rate, that the Allied victory came about largely because the Allies were able to defeat the submarine by sea and the airplane by air and the German tanks on the ground. In short, we were able to develop the tools to defeat the blitzkrieg on which Hitler pinned all of his hope.

Then of course, we were involved in the development of the landing craft of all types and kinds, and the special equipment necessary for amphibious warfare.

The development of effective rocket weaponry by two NDRC groups in the summer of 1942 was a particularly vexing problem. In principle, the rocket is an almost ideal artillery weapon. Its curse at the outset was its inaccuracy. The crux of the problem was not so much in the design of the rocket itself or its stabilizing fins but rather in finding a suitable propellant sufficiently strong mechanically with exactly the right burning time capable of imparting a steady thrust. Unfortunately, American powder manufacturers had little or no experience with materials of such capabilities.

One group, working at Indian Head near Cumberland, Maryland, was devoted to development of rocket artillery weapons based on so-called single-base rocket powders extruded in a moist or wet form. It was headed by Charles N. Hickman, a Bell Telephone Laboratories scientist who as a young man had worked with America's early rocket pioneer, Robert Goddard. While the Hickman group made progress in improvement of single-base rocket powders, Charles C. Lauritsen, while in England with L. R. Hafstad in the spring of 1941 to confer with the British on fuse research, discovered the British were producing something
better than the American improvement: double-base powders using a process called dry extrusion involving the use of extremely heavy presses.

As a result of Lauritsen's investigation, a group was formed at the California Institute of Technology and, starting from scratch, built the extrusion presses in a small area of Pasadena known as Eaton Canyon. The Cal Tech group—or "western" group as Hovde called it—worked on a whole series of projects of interest to the U.S. Navy: antishell rockets, beach barrage rockets, and the 3.25-inch and 5-inch aircraft rockets and retrofiring bomb rockets for slower naval patrol planes.

The eastern group earlier had developed the famed infantry "Bazooka," America's first real rocket weapon of the war. But the group had great difficulty with the army ordnance people who seemed traditionally wedded to their fine field pieces.

Coupled with that administrative problem was an even bigger one: the eastern and western rocket ordnance teams were at odds. Late in 1942, NDRC reorganized the two groups and placed them under Division Three, that operation within the NDRC devoted to rocket ordnance research and development. It was headed by John T. Tate, the University of Minnesota professor who had reminisced with Hovde about their days at Minnesota as they sat through an air raid in a London bomb shelter a year earlier. Tate was also in charge of a group involved in subsurface submarine warfare problems. By the summer of 1943, it had claimed his full attention. Lauritsen, who also played an interesting role in Hovde's NDRC career, was appointed as Division Three chief until that fall.

Conant and Bush saw the administrative problems resulting from the fact that the eastern and western groups each felt its particular methodology should take priority. They asked Hovde to head the division to try to manage the two conflicting groups and types of programs working toward nearly identical goals. "The problem, as I attempted to solve it," Hovde recalls, "was to get the eastern group working on those aspects of rocketry which they had started and which had merit and to eliminate some of the duplication."

When the western group developed the five-inch aircraft rocket, Division Three began to manufacture and test them in experimental quantities at Inyokern, the navy's southern California experimental base. Powder extrusion
facilities were also built there to supplement those at the Cal Tech site in Pasadena to increase production.

Then came a crash program to produce as many as 100 five-inch rockets a day to prepare the allied air arms for the invasion at Normandy. Lauritsen was part of a group which returned to England to help the military install so-called zero-length launchers on the wings of Allied fighter planes and to train the pilots how to fire them. That operation was one of the few in which NDRC went beyond its research role and actually engaged in weapons production. The ten-inch rocket was developed by the western group for navy use. A tremendously big weapon, it was marked for use in the Pacific theater against the Japanese. The first rockets went aboard the aircraft carrier *Benjamin Franklin* in the last year of the war for use by a squadron specially trained to fire them. The *Franklin* became a victim of a kamikaze attack in which the ship was severely damaged and set afire. In the below-decks holocaust, some of the rockets went off, and although the *Franklin* did not sink, it was a tragic U.S. loss. The ten-inch rocket thus was never used against enemy targets.

On August 6, 1945, Hovde and Lauritsen were at Los Alamos Laboratory built by the army in 1942 atop a lonely mesa about twenty miles north of Santa Fe, New Mexico. The laboratory’s sole mission was to create the atomic bomb, and its staff included what at that time may have been the most extraordinary group of scientists ever assembled. Its director was J. Robert Oppenheimer, the forty-one-year-old theoretical physicist from the University of California. He had taken part earlier in the historical advances made in atomic physics at California and the University of Chicago. His insight, resourcefulness, and sound judgment led to his selection to head up the Los Alamos project.

Many of the men Hovde knew in the early days of NDRC had literally disappeared from the scene, only to turn up at Los Alamos as part of the A-bomb team. Among them was Kistiakowsky, chief of the explosives division of OSRD, who had become the chief of the explosives division at Los Alamos.

Although the laboratory had set off history’s first atomic device at a desert site south of Alamogordo in July 1945, research efforts continued. About half of the team of
fuse experts in Hovde’s division had been assigned to help with A-bomb fusing problems.

Sitting in Oppenheimer’s office, Lauritsen, Oppenheimer, and Hovde were about to open their discussion of plans for the work of the Division Three fuse people for the next six months when the ring of Oppenheimer’s telephone interrupted.

“Hello,” Oppenheimer began, then listened silently, a curious expression spreading over his face. “So they picked Hiroshima . . .” Oppenheimer had received the news that the B-29 bomber Enola Gay had dropped the first A-bomb, forever changing the course of human events. It was the first day of what has come to be called The Atomic Age.

Hovde’s mind raced back to an evening in early spring of 1941 at his office in the U.S. embassy in London. He was working alone. At about 11 p.m., the door opened suddenly and in came Lauritsen. He pulled a piece of paper out of his pocket.

“This paper is so valuable we must duplicate it at once and get it back to the States to Bush,” he announced.

“What is it, Charlie?” Hovde asked.

“Well, you can read it yourself,” Lauritsen replied.

Hovde took the paper, looked at it. It was marked British Top Secret. Hovde was astonished.

“Where did you get this, Charley?”

“Oh, some friends of mine gave it to me.”

“But Charley, it is against all our regulations and the agreements we made with the British about handling information . . .!”

“I know that—but they want us to have it . . . the scientist who gave it to me.”

Lauritsen and Hovde then got busy and stayed up half the night duplicating the paper which Hovde got off to Bush in the next day’s pouch to Washington. Lauritsen returned the original document to the physicist who had given it to him.

The contents of the paper were important enough to cause some skipped heartbeats. It was a British scientific paper which gave proof that the fission reaction produced neutrons with a coefficient greater than one; that is, for each fission that took place in an atomic reaction, more than one neutron would be released. This meant that the chain reaction would go—that an atomic explosion of great and unknown force was possible.
Later, in October 1941, as Hovde was about to return to London at the close of his stateside leave, Bush called him into his Washington office.

"I have a letter from the president to Prime Minister Churchill. You are to deliver it to him at No. 10 Downing Street," Bush said. Then he explained to him the contents: FDR had agreed on the part of the United States with Great Britain to take full responsibility for development of the atomic bomb. The letter, which Hovde carried to London in a compartmented waist-belt under his clothing, was reproduced later in Churchill's history of the war, though Hovde himself was not mentioned.

"Nobody knew who delivered the letter. I was just a courier in this case," Hovde says, "but I did know what was in the letter."

The chances are remote that three separate incidents—the scientific paper in London, the letter from FDR to Churchill, the telephone call in Oppenheimer's office—all involving such an epochal event would occur in the lifetime of any single individual. Although they constitute an interesting and memorable set of coincidences, an event four months before Hiroshima had far more impact on the future of thirty-seven-year-old Frederick L. Hovde.

On "one of those days in Washington," April 25, 1945, muggy, warm weather oppressed the capital, a typical spongy spring in the District of Columbia. At the OSRD on P Street Northwest Hovde's telephone rang. The caller was Kathryn McHale, general director of the American Association of University Women and a member of the Purdue University Board of Trustees. Miss McHale was one of the nation's prominent women leaders and a widely-known educator. She was a native of Logansport, Indiana (where she maintained a legal residence). She had attended Columbia University to earn three degrees which included the Ph.D. in psychology in 1926. She taught at Baltimore's exclusive Goucher College for Women, formulated the McHale Vocational Interest Test, lobbied Congress against the lifting of grade-label requirements under the pure food and drug laws, wrote three books, urged formation of a united nations organization as early as 1943, and loudly criticized the federal housing program because it did not provide for mortgage loans for homes affordable to the average war veteran.
Miss McHale also served as an advisory editor to several publications, including Parents' Magazine, and was called the "moving spirit" of the 1944 Women's Conference on Post-War Planning. "She always knows what she is going to do," said one magazine writer of her, "and she does it."

One of the things she did was become only the second woman trustee in Purdue history, serving from 1937 to 1946. She also had a wealthy and politically influential Democratic brother, Frank McHale, a close friend of Indiana's then Gov. Paul V. McNutt who had originally appointed her to the Purdue board.

Would he, she asked Hovde, come to her office to discuss an important matter? He would.

As Hovde walked toward her office on I Street, the threatened spring thundershower broke; he made his appearance soaked and steamy. Miss McHale came right to the point, seeming to pay little attention to his wet clothing.

"Would you be interested in becoming president of Purdue University?" she asked him.

"Yes, I would be very much interested—when my war work is ended," Hovde replied evenly as his rumpled, wet clothing dripped water on the floor.