

# FROM MAJOR JORDAN'S DIARIES

## INTRODUCTION BY BEN WILLIAMS:

The United States Government, beginning in the late 1940's, financed and orchestrated the buildup of the Soviet Union because it needed a pretext to create the US Military Industrial Complex ... the biggest, most powerful, and most dangerous military in the history of mankind. In order to build this outlandish power base it was necessary to scare Americans into thinking that they were in real and imminent danger from an enemy ... namely the USSR. Thus, the Soviet Union was constructed by the west as a pretext for the US Government to build the great police state that it is today, with the ridiculously expensive military that operates by secret directive to control all nations of the Earth by threat of invasion and destruction.

Meanwhile the US Government with its leviathan military deceives Americans, telling them that its true motive is to protect America from dangerous enemies (the Soviet Union during the Cold War, then "terrorist Muslims" during the 1990's and early 2000's, and now in 2014 the newly declared "enemy" is Russia). The declared dangers from these invented "enemies" are always fabricated by the US Government in order to incite fear among Americans who then will support the US Military to threaten, invade, and/or destroy any nation it chooses. (For a recorded speech by Major Jordan revealing the explosive discoveries he made about the motives of the US Government, go to [\[CLICK HERE\]](#), also to see an explanation of how the US built up the USSR [\[CLICK HERE\]](#).

Now read the shocking revelations from Major Jordan's Diaries about the billions of dollars, airplanes, tanks, munitions, foodstuffs, whole factories, blueprints and material for building the Atomic Bomb, personal luxuries for despotic Bolshevik Talmudic Communist rulers, as well as the paper and plates enabling them to print U.S. Federal Reserve Notes -- all this sent to the U.S.S.R. from US Air Force bases in Montana and New Jersey.

*"We are determined that nothing shall stop us from sharing with you all that we have . . ."*

- Harry Hopkins, AT THE RUSSIAN AID RALLY, MADISON SQUARE GARDENS, JUNE 1942.

Misguided anti-Communist propagandists in America have misdirected their audiences by teaching that there were only a few pro-Communist elements in the US Government who were sabotaging and undermining the interests of Americans. What they didn't know, or were covering up, was the fact that the deceit and sabotage was at the highest levels of government and banking, as well as the mainstream media. Above all singular national interests is the body of elite internationalists who pull the strings secretly from above to keep the nations of the world at war for motives of their own. Harry Hopkins, and others like him, were not working against their superiors. They carry out the wishes of their international superiors. The leaders of governments and the banks that control them were intentionally building up the Soviet Empire for the purposes stated above ... to create a great bogeyman with which to deceive the American people as a pretext to building a tremendous and continually expanding government and military with which to police the entire world.

# From Major Jordan's Diaries

George Racey Jordan

Harcourt, Brace edition published 1952

Free Enterprise edition published 1958

American Opinion edition published 1961

The American Library edition published 1965

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## PREFACE:

My reason for writing this book is very simple: I would like to keep the record straight. I want to put in permanent form the full story of my experiences as a Lend-Lease expediter and liaison officer with the Russians during the war, when I served for two crucial years, from May 1942 to June 1944, both at Newark Airport and at the big air base at Great Falls, Montana.

I went into the Army as a businessman in my forties and a veteran of World War I. From the First, as my story shows, I worked wholeheartedly on behalf of the Russians because, like everyone else, I considered it my duty to do so. That they were satisfied with my efforts is indicated by the fact that it was Colonel Kotikov, head of the Russian mission at Great Falls, who requested my promotion to Major.

But the tremendous volume of Lend-Lease material going through under "diplomatic immunity," the infiltration of Soviet agents through the Pipeline, the shipments of nonmilitary supplies and even military secrets, were more than I could stomach. I finally protested through proper channels, first in Great Falls, and then in Washington; nothing happened. This was in 1944, while I was still in the Army.

When the atom bomb was first dropped in August, 1945 I learned the full meaning of a word – uranium – I had already encountered in my contact with Colonel Kotikov. When the President announced in 1949 that the Russians had the bomb, I went to see Senator Bridge and my story was thoroughly investigated by the F.B.I. as well as by Fulton Lewis, Jr., who interviewed me on his broadcasts. There followed one Congressional hearing in December, 1949 and another in March, 1950.

I have been shocked at the efforts of the character assassins and press experts to keep the implications of this story from being brought into proper focus. A vicious attack was launched against Fulton Lewis, Jr., and the sniping at me has continued for nearly three years, in the vain hope that this story would never be evaluated and understood by the public. (Incidentally, I wish to state that Mr. Lewis has not seen the manuscript of this book, nor had any connection with it.)

As late as June, 1952 the Long Island Daily Press falsely declared:  
"A Congressional committee, however, found no basis for (Major Jordan's) charges."

On the contrary, three members of the Committee stated just the opposite. First there is the following summary by Senator Richard M. Nixon, Republican nominee for Vice President. His questions are addressed to Donald T. Appell, former F.B.I. agent and the special investigator for the Committee on Un-American Activities:

Mr. Nixon: Your investigation shows first, then, that Major Jordan did, at least on two occasions, make a report concerning the passage of materials through Great Falls?

Mr. Appell: Yes.

Mr. Nixon: As I recall, Mr. Chambers had to tell his story five times before any cognizance was taken of his charges. So apparently if Major Jordan had told his more than twice he might have gotten the Government to do something about it. But be that as it may, as I see it at present time the issues are five. First of all, the charge was made that if the shipments were going through, Major Jordan should have made a report. In this regard, he did make a report of the charges at least on two occasions. Is that correct?

Mr. Appell: Yes.

Mr. Nixon: As far as you have been able to find, at least two reports were made?

Mr. Appell: Yes; that is correct.

Mr. Nixon: Another point that was made was whether or not he tore radar equipment out of C-47 planes. As I understand, this particular phase of his story was questioned in the article in Life magazine, in which they said that the report that Mr. Jordan ripped out radar equipment from C-47s was preposterous, and they quoted his superior officer, Meredith, in that respect; and it was further said that as a matter of fact no C-47s were equipped with radar at the time mentioned by Major Jordan.

The investigation of the committee, in addition to your own, has shown, (1) that the C-47s equipped with radar and going to Russia did go through Great Falls; and (2) that Mr. Jordan specifically asked permission of Colonel Gitzinger in Daytona to tear the radar equipment out of a specific plane on one occasion.

Mr. Appell: That is correct, and he received that permission from Colonel Gitzinger.

Mr. Nixon: Then on the point of whether Mr. Jordan did or did not tear radar out of a plane, your investigation substantiates Major Jordan?

Mr. Appell: That is correct.

Mr. Nixon: Another point that Major Jordan made was that certain documents were going through Great Falls under diplomatic immunity; that he broke into the cases, examined the documents, and that some of the material in there which he examined consisted of plans, secret material, and so on, which it would be assumed would not be regarded under diplomatic immunity.

I think it is quite clear from your testimony that that phase of Major Jordan's testimony stands up; is that correct?

Mr. Appell: Well, we do know, we are in contact with a witness, a former employee of the Russian Purchasing Commission, who helped pack one pouch of so-called diplomatic mail that went through, and we know it contained material highly secretive on industrial and war developments . . .

Mr. Nixon: Is it the intention of the staff, then, to present the witness [Victor A. Kravchenko] who may be able to substantiate, at least in part, Major Jordan's testimony that secret material was going through?

Mr. Appell: That is correct. [Mr. Kravchenko's testimony is quoted on pages 257-67.]

Mr. Nixon: On the point of the so-called shipments of uranium . . . the shipments went through. Is that correct?

Mr. Appell: Two specific shipments of uranium oxide and uranium nitrate and shipments of heavy water have been completely documented to include even the number of the plane that flew the uranium and heavy water to Great Falls.

Mr. Nixon: And the final point is the matter of Mr. Hopkins having attempted to expedite the shipments. Major Jordan's testimony on that was that his notes, written at the time, showed the initials "H.H." on one of the consignments which he broke into. Your investigation has shown no correspondence of Mr. Hopkins in which he used the initials "H.H." Is that correct?

Mr. Appell: That which we reviewed.

Mr. Nixon: I understand that. My point is that as far as the investigation you have been able to make is concerned, you as yet have been unable to substantiate Major Jordan's story on that point; is that correct?

Mr. Appell: Yes.

Mr. Nixon: But you have substantiated it on the four other points I mentioned?

Mr. Appell: Generally, yes.

Mr. Nixon: That is all.

Representative Harold H. Velde, also a member of the Committee, put this question to the investigator:

"Was Major Jordan's story, as far as your investigation was concerned, ever discredited by any of the witnesses whom you contacted?"

Mr. Appell: "No."

Finally, Representative Bernard W. Kearney of New York State made this statement:

"Listening to the testimony here, it seems to me the only one who did do his duty was Major Jordan. On two separate occasions, Major Jordan not only brought all this to the attention of his superior officers, but as a result conferences were held by various (Government) agencies named \* - then it was dropped."

George Racey Jordan  
East Hampton, Long Island  
August 1, 1952

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# MAJOR JORDAN'S DIARIES

## "MR BROWN" AND THE START OF A DIARY

Late one day in May 1942, several Russians burst into my office at Newark Airport, furious over an outrage that had just been committed against Soviet honor. They pushed me toward the window where I could see evidence of the crime with my own eyes.

They were led by Colonel Anatoli N. Kotikov, the head of the Soviet mission at the airfield. He had become a Soviet hero in 1935 when he made the first seaplane flight from Moscow to Seattle along the Polar cap; Soviet newspapers of that time called him "the Russian Lindbergh". He had also been an instructor of the first Soviet parachute troops, and he had 38 jumps to his credit.

I had met Colonel Kotikov only a few days before, when I reported for duty on May 10, 1942. My orders gave the full title of the Newark base as "UNITED NATIONS DEPOT No. 8, LEND-LEASE DIVISION, NEWARK AIRPORT, NEWARK, NEW JERSEY, INTERNATIONAL SECTION, AIR SERVICE COMMAND, AIR CORPS, U.S. ARMY".

I was destined to know Colonel Kotikov very well, and not only at Newark. At that time he knew little English, but he had the hardihood to rise at 5.30 every morning for a two-hour lesson. Now he was pointing out the window, shaking his finger vehemently.

There on the apron before the administration building was a medium bomber, an A-20 Douglas Havoc. It had been made in an American factory, it had been donated by American Lend-Lease, it was to be paid for by American taxes, and it stood on American soil. Now it was ready to bear the Red Star of the Soviet Air Force.

As far as the Russians and Lend-Lease were concerned, it was a Russian plane. It had to leave the field shortly to be hoisted aboard one of the ships in a convoy that was forming to leave for Murmansk and Kandalaksha. On that day the Commanding Officer was absent and, as the acting Executive Officer, I was in charge.

I asked the interpreter what "outrage" had occurred. It seemed that a DC-3, a passenger plane, owned by American Airlines, had taxied from the runway and, in wheeling about on the concrete plaza to unload passengers, had brushed the Havoc's engine housing. I could easily see that the damage was not too serious and could be repaired. But that seemed to be beside the point. What infuriated the Russians was that it be tolerated for one minute that an American commercial liner should damage, even slightly, a Soviet warplane!

The younger Russians huddled around Colonel Kotikov over their Russian-English dictionary, and showed me a word: "punish". In excited voices they demanded: "Pooneesh peelote!" I asked what they wanted done to the offending pilot. One of them aimed an imaginary revolver at his temple and pulled the trigger.

"You're in America," I told him. "We don't do things that way. The plane will be repaired and ready for the convoy."

They came up with another word: "Baneesh!" They repeated this excitedly over and over again. Finally I understood that they wanted not only the pilot, but American Airlines, Inc., expelled from the Newark

field.

I asked the interpreter to explain that the US Army has no jurisdiction over commercial companies. After all, the airlines had been using Newark Airport long before the war and even before La Guardia Airport existed. I tried to calm down the Russians by explaining that our aircraft maintenance officer, Captain Roy B. Gardner, would have the bomber ready for its convoy even if it meant a special crew working all night to finish the job.

I remembered what General Koenig had said about the Russians when I went to Washington shortly after Pearl Harbor. He knew that in 1917 I had served in the Flying Machine Section, US Signal Corps, and that I had been in combat overseas. When he told me there was an assignment open for a Lend-Lease liaison officer with the Red Army Air Force, I was eager to hear more about it.

"It's a job, Jordan, that calls for an infinite amount of tact to get along with the Russians," the General said. "They're tough people to work with, but I think you can do it."

Thus I had been assigned to Newark for the express purpose of expediting the Lend-Lease program. I was determined to perform my duty to the best of my ability. I was a "re-tread", as they called us veterans of World War I, and a mere Captain at the age of 44 - but I had a job to do and I knew I could do it. The first days had gone reasonably well and I rather liked Kotikov. But there was no denying it: the Russians were tough people to work with.

As my remarks about repairing the bomber on time were being translated, I noticed that Colonel Kotikov was fidgeting scornfully. When I finished, he made an abrupt gesture with his hand. "I call Mr Hopkins," he announced.

It was the first time I had heard him use this name. It seemed such an idle threat, and a silly one. What did Harry Hopkins have to do with Newark Airport? Assuming that Kotikov carried out his threat, what good would it do? Commercial planes, after all, were under the jurisdiction of the Civil Aeronautics Board.

"Mr Hopkins fix," Colonel Kotikov asserted. He looked at me and I could see now that he was amused in a grim kind of way. "Mr Brown will see Mr Hopkins, no?" he said, smiling.

The mention of "Mr Brown" puzzled me, but before I had time to explore this any further, Kotikov was barking at the interpreter that he wanted to call the Soviet Embassy in Washington. All Russian long-distance calls had to be cleared through my office, and I always made sure that the Colonel's, which could be extraordinarily long at times, were put through "collect". I told the operator to get the Soviet Embassy, and I handed the receiver to the Colonel.

By this time the other Russians had been waved out of the office, and I was sitting at my desk. Colonel Kotikov began a long harangue over the phone in Russian, interrupted by several trips to the window. The only words I understood were "American Airlines", "Hopkins", and the serial number on the tail which he read out painfully in English. When the call was completed, the Colonel left without a word. I shrugged my shoulders and went to see about the damaged Havoc. As promised, it was repaired and ready for hoisting on shipboard when the convoy sailed.

That, I felt sure, was the end of the affair.

I was wrong. On June 12th the order came from Washington, not only ordering American Airlines off the field but directing every aviation company to cease activities at Newark forthwith. The order was not for a day or a week. It held for the duration of the war, though they called it a "Temporary Suspension".

I was flabbergasted. It was the sort of thing one cannot quite believe, and certainly cannot forget.

Would we have to jump whenever Colonel Kotikov cracked the whip? For me, it was going to be a hard lesson to learn.

Captain Gardner, who had been at Newark longer than I, and who was better versed in what he called the "push-button system", told me afterwards that he did not waste a second after I informed him that Colonel Kotikov had threatened to "call Mr Hopkins". He dashed for the best corner in the terminal building, which was occupied by commercial airlines people, and staked out his claim by fixing his card on the door. A few days later the space was his.

I was dazed by the speed with which the expulsion proceedings had taken place. First, the CAB inspector had arrived. Someone in Washington, he said, had set off a grenade under the Civil Aeronautics Board. He spent several days in the control tower, and put our staff through a severe quiz about the amount of commercial traffic and whether it was interfering with Soviet operations. The word spread around the field that there was going to be hell to pay. Several days later, the order of expulsion arrived. A copy of the order is reproduced in the centre section of this edition, a masterpiece of bureaucratic language.

I had to pinch myself to make sure that we Americans, and not the Russians, were the donors of Lend-Lease. "After all, Jordan," I told myself, "you don't know the details of the whole operation; this is only one part of it. You're a soldier, and besides, you were warned that this would be a tough assignment." At the same time, however, I decided to start a diary, and to collect records of one kind and another and make notes and memos of everything that occurred. This was a more important decision than I then realized.

Keeping a record wasn't exactly a revolutionary idea in the Army. I can still see Sergeant Cook, at Kelly Field, Texas, in 1917, with his sandy thatch and ruddy face, as he addressed me, a 19-year-old corporal, from the infinite superiority of a master sergeant in the regular Army: "Jordan, if you want to get along, keep your eyes and your ears open, keep your big mouth shut, and keep a copy of everything!"

Now I felt a foreboding that one day there would be a thorough investigation of Russian Lend-Lease. I was only one cog in the machinery. Yet because of the fact that I couldn't know the details of high-level strategy, I began the Jordan diaries...

## **THE "BOMB POWDER" FOLDERS**

In my capacity as Liaison Officer, I began helping the Russians with necessary paper work and assisted them in telephoning to the various factories to expedite the movement of supplies to catch particular convoys. As Colonel Kotikov communicated with the many different officials in the Soviet Government Purchasing Commission, their names became more and more familiar to me.

Few of the American officers who came in casual contact with the Russians ever got to see any of their records. But the more I helped Rodzevitch and Colonel Kotikov, the more cordial they became. It became customary for me to leaf through their papers to get shipping documents, and to prepare them in folders for quick attention when they reported back to Washington.

At this time I knew nothing whatever about the atomic bomb. The words "uranium" and "Manhattan Engineering District" were unknown to me. But I became aware that certain folders were being held to one side on Colonel Kotikov's desk for the accumulation of a very special chemical plant. In fact, this chemical plant was referred to by Colonel Kotikov as a "bomb powder" factory. By referring to my diary, and checking the items I now know went into an atomic energy plant, I am able to show the following records, starting with the year 1942 while I was still at Newark. These materials, which are necessary for the creation of an atomic pile, moved to Russia in 1942:

Graphite: natural, flake, lump or chip, costing American taxpayers \$812,437. Over thirteen million dollars' worth of aluminum tubes (used in the atomic pile to 'cook' or transmute the uranium into plutonium), the exact amount being \$13,041,152. We sent 834,989 pounds of cadmium metal for rods to control the intensity of an atomic pile; the cost was \$781,472. The really secret material, thorium, finally showed up and started going through immediately. The amount during 1942 was 13,440 pounds at a cost of \$22,848. (On January 30, 1943 we shipped an additional 11,912 pounds of thorium nitrate to Russia from Philadelphia on the SS John C. Fremont. It is significant that there were no shipments in 1944 and 1945, due undoubtedly to General Groves' vigilance.)

It was about this time that the Russians were very anxious to secure more Diesel marine engines which cost about \$17,500 each. They had received around 25 on previous shipments and were moving heaven and earth to get another 25 of the big ones of over 200-horsepower variety. Major General John R. Deane, Chief of our Military Mission in Moscow, had overruled the Russians' request for any Diesel engines because General MacArthur needed them in the South Pacific. But the Russians were undaunted and decided to make an issue of it by going directly to Hopkins who overruled everyone in favor of Russia. In the three-year period, 1942-44, a total of 1,305 of these engines were sent to Russia! They cost \$30,745,947. The engines they had previously received were reported by General Deane and our military observers to be rusting in open storage. It is now perfectly obvious that these Diesels were post-war items, not at all needed for Russia's immediate war activity...

It is true that we never knew the exact use to which anything sent under Russian Lend-Lease was put, and the failure to set up a system of accountability is now seen to have been an appalling mistake. But could anything be more foolish than to suppose that the atomic materials we sent were not used for an atomic bomb which materialized in Russia long before we expected it? The British let us inspect their installations openly, and exchanged information freely. The Russians did not. Our Government was intent on supplying whatever the Russians asked for, as fast as we could get it to them - and I was one of the expeditors. And when I say "our Government", I mean of course Harry Hopkins, the man in charge of Lend-Lease, and his aides. We in the Army knew where the orders were coming from, and so did the Russians. The "push-button system" worked splendidly; no one knew it better than Colonel Kotikov...

It had become clear, however, that we were not going to stay at Newark much longer. The growing scope of our activities, the expansion of Lend-Lease, the need for more speedy delivery of aircraft to Russia - all these factors were forcing a decision in the direction of air delivery to supplant ship delivery. It had long been obvious that the best route was from Alaska across to Siberia.

From the first, the Russians were reluctant to open the Alaskan-Siberian route. Even before Pearl Harbor, on the occasion of the first Harriman-Beaverbrook mission to Moscow in September 1941, Averell Harriman had suggested to Stalin that American aircraft could be delivered to the Soviet Union from Alaska through Siberia by American crews. Stalin demurred and said it was "too dangerous a route". It would have brought us, of course, behind the Iron Curtain.

During the Molotov visit to the White House, Secretary of State Cordell Hull handed Harry Hopkins a memorandum with nine items of agenda for the Russians, the first of which was: "The Establishment of an Airplane Ferrying Service From the United States to the Soviet Union Through Alaska and Siberia." When the President brought this up, Molotov observed that it was under advisement, but "he did not as yet know what decision had been reached".

Major General John R. Deane has an ironic comment on Russian procrastination in this regard:

"Before I left for Russia, General Arnold, who could pound the desk and get things done in the United States, had called me to his office, pounded the desk, and told me what he wanted done in the way of improving air transportation between the United States and Russia. He informed me that I was to obtain

Russian approval for American operation of air transport planes to Moscow on any of the following routes in order of priority: one, the Alaskan-Siberian route; two, via the United Kingdom and Stockholm; or three, from Tehran to Moscow. I saluted, said 'Yes, sir', and tried for two years to carry out his instructions." (John R. Deane, *The Strange Alliance*, Viking, 1947, p. 78)

Where the US was not able to force Russia's hand, Nazi submarines succeeded. Subs out of Norway were attacking our Lend-Lease convoys on the Murmansk route, apparently not regarded as "too dangerous a route" for American crews. A disastrous limit was finally reached when, out of one convoy of 34 ships, 21 were lost. The Douglas A-20 Havocs, which were going to the bottom of the ocean, were more important to Stalin than human lives. So first we started flying medium bombers from South America to Africa, but by the time they got across Africa to Tiflis, due to sandstorms the motors had to be taken down and they were not much use to the Russians. Nor were we able to get enough of them on ships around Africa to fill Russian requirements for the big offensive building up for the battle of Stalingrad.

Finally, Russia sent its OK on the Alaskan-Siberian route. Americans would fly the planes to Fairbanks, Alaska; Americans would set up all the airport facilities in Alaska; Soviet pilots would take over on our soil; Soviet pilots only would fly into Russia.

The chief staging-point in the US was to be Gore Field in Great Falls, Montana. A few years before the war General Ralph Royce, who had been experimenting in cold-weather flying with a group of training planes called "Snow Birds", had found that Great Falls, with its airport 3,665 feet above sea level, on the top of a mesa tableland 300 feet above the city itself, had a remarkable record of more than 300 clear flying days per year, despite its very cold dry climate in the winter.

If you look at a projection of the globe centred on the North Pole, you will see that Great Falls is almost on a direct line with Moscow. This was to be the new and secret Pipeline. The Army called it ALSIB.

## **WE MOVE TO MONTANA**

It was the coldest weather in 25 years when the route was mapped out. First of all, Major General Follette Bradley flew experimentally by way of the old gold-field airstrips of Canada. With the Russians he scratched out a route from Great Falls through Fairbanks, Alaska and across Siberia to Kuibyshev and Moscow. It is the coldest airway in the world across the Yukon to Alaska and through the "Pole of Cold" in Siberia, but it worked.

Colonel (then Captain) Gardner, our trouble-shooter at Newark, was one of the first to go ahead to Montana. Then Lieutenant Thomas J. Cockrell arrived at Great Falls in charge of an advance cadre to make arrangements for the housing and quartering of troops of the 7th Ferrying Group of the Air Transport Command, which was moving from Seattle.

Gore Field was at that time known as the Municipal Airport of Great Falls. Although it had been selected as the home of the 7th, actual construction of barracks and other accommodations had not been started. The Great Falls Civic Center was therefore selected as a temporary home, with headquarters, barracks, mess-hall and other facilities combined under the roof of the huge municipal structure. The Ice Arena was also used as a combination barracks and mess-hall, and temporary headquarters were established in the office of Mayor Ed Shields and the offices of other city officials.

For nearly four months, the Civic Center remained the home of the 7th Ferrying Group, while contractors rushed construction of the barracks, hangars and other buildings which were to make up the post on Gore Field. The group completed its move up to Gore Hill early in November 1942. The 7th Group continued to supervise all stations and operations along the Northwest Route until November 17, 1942, when the Alaskan Wing of the Air Transport Command was established to take over the

operations of the route to the north through Canada to Fairbanks, where hundreds of Russian pilots were waiting to take over.

Major Alexander Cohn arrived from Spokane to establish the 34th Sub-Depot for the Air Service Command. It was this depot that supervised the mountains of air freight that originated from all over the United States and poured into the funnel of this end of the Pipeline.

Colonel Gardner arranged for my transfer from Newark to Great Falls. My orders designated me as "United Nations Representative". Few people realize that although the United Nations organization was not set up in San Francisco until September 1945, the name "United Nations" was being used in the Lend-Lease organization as early as 1942, as in my original orders to Newark.

For the record, I want to quote my orders to Great Falls, with one phrase italicized. One reason for this is that in 1949 the New York Times printed the following statement of a "spokesman" for the United Nations: "Jordan never worked for the United Nations." I thereupon took the original copy of my orders in person to the Times, explained that this was an Army designation as early as 1942, and asked them in fairness to run a correction (which they did not do), since I never claimed to have "worked for the United Nations" and their story left the impression that I was lying. Here are my orders, with the original Army abbreviations [see text box below].

**Army Air Forces  
Headquarters, 34th Sub Depot  
Air Service Command  
Office of the Commanding Officer**

Capt GEORGE R. JORDAN, 0-468248, AC, having reported for duty this sta per Par 1, SO No. 50, AAF, ASC, Hq New York Air Serv Port Area Comd, Newark Airport, N.J., dated 2 January 43, *is hereby asgd United Nations Representative*, 34th Sub Depot, Great Falls, Montana, effective this date.

By order of

Lt. Colonel MEREDITH.

These official orders activating my post were preceded on January 1st by a Presidential directive [see text box below]. This directive was addressed to the Commanding Generals of the Air Transport, Material, and Air Service Commands, through Colonel H. Ray Paige, Chief, International Section, Air Staff, who worked directly under General Arnold. This directive gave first priority for the planes passing through our station, even over the planes of the United States Air Force! It was extremely important in all my work. I quote from the crucial first paragraph:

"...To implement these directives, the modification, equipment and movement of Russian planes have been given first priority, even over planes for U.S. Army Air Forces..."

...The Russian staff had moved from Newark to Great Falls, with Colonel Kotikov still at their head. By this time I was on a very friendly personal basis with the Colonel. As human beings, we got on very well together. From the viewpoint of the usual Russian behavior toward Americans, it could even be said that we were on intimate terms...

**HEADQUARTERS ARMY AIR FORCES  
WASHINGTON**

January 1, 1943.

**MEMORANDUM FOR THE  
COMMANDING GENERAL,  
AIR SERVICE COMMAND:**

**Subject: Movement of Russian Airplanes.**

1. The President has directed that "airplanes be delivered in accordance with protocol schedules by the most expeditious means." To implement these directives, the modification, equipment and movement of *Russian planes have been given first priority, even over planes for U.S. Army Air Forces...*

By Command of  
Lieutenant General ARNOLD,

Richard H. Ballard  
Colonel, G.S.C.  
Assistant Chief of Air Staff, A-4

## **THE BLACK SUITCASES**

After my return to Great Falls I began to realize an important fact: while we were a pipeline to Russia, Russia was also a pipeline to us.

One really disturbing fact which brought this home to me was that the entry of Soviet personnel into the United States was completely uncontrolled. Planes were arriving regularly from Moscow with unidentified Russians aboard. I would see them jump off planes, hop over fences, and run for taxicabs. They seemed to know in advance exactly where they were headed, and how to get there. It was an ideal set-up for planting spies in this country, with false identities, for use during and after the war.

It is hard to believe, but in 1943 there was no censorship set-up at Great Falls. An inspector more than 70 years old, named Randolph K. Hardy, did double work for the Treasury Department in customs and immigration. His office, in the city, was four miles from the airfield. He played the organ in a local church, and I was often told he was practicing and could not be interrupted. I took it upon myself to provide him with telephone, typewriter, desk, file cabinet, stenographer, interpreter and staff car.

Finally I was driven to put up a large sign over my own office door, with the legend in Russian and English: "Customs Office - Report Here". When Mr Hardy was not present, I got into the habit of demanding passports myself and jotting down names and particulars. It was not my job, but the list in my diary of Russians operating in this country began to swell by leaps and bounds. In the end I had the 418 names mentioned earlier.

Despite my private worries, my relations with Colonel Kotikov were excellent. I was doing all that I could do to expedite Russian shipments; my directives were clear, and I was following them out to the best of my ability.

Colonel Kotikov was well aware that a Major could do more expediting than a Captain. I was not too surprised, therefore, to learn that Kotikov had painstakingly dictated in English the following letter to Colonel Gitzinger:

Dear Colonel Gitzinger:

Capt. Jordan work any day here is always with the same people, Sub-Depot Engineering Officer, Major Boaz; 7th Ferrying Group Base Engineering Officer, Major Lawrence; Alaskan Wing Control and Engineering Officer, Major Taylor; Sub-Depot Executive Officer, Major O'Neill; and Base Supply Officer, Major Ramsey.

He is much hindered in his good work by under rank with these officers who he asks for things all time. I ask you to recommend him for equal rank to help Russian movement here.

A. N. KOTIKOV,

Col., U.S.S.R. Representative

When my permission finally came through, the gold oak leaves were pinned on my shoulders by Colonel Kotikov. This occasion was photographed and the picture is reproduced elsewhere in this book.

Now two other occurrences began troubling me. The first was the unusual number of black patent-leather suitcases, bound with white window-sash cord and sealed with red wax, which were coming through on the route to Moscow. The second was the burglary of morphine ampules from half of the 500 first-aid kits in our Gore Field warehouse.

The first black suitcases, six in number, were in the charge of a Russian officer and I passed them without question upon his declaration that they were "personal luggage". But the units mounted to ten, twenty and thirty and at last to standard batches of fifty, which weighed almost two tons and consumed the cargo allotment of an entire plane. The officers were replaced by armed couriers, traveling in pairs, and the excuse for avoiding inspection was changed from "personal luggage" to "diplomatic immunity".

Here were tons of materials proceeding to the Soviet Union, and I had no idea what they were. If interrogated, I should have to plead ignorance.

I began pursuing Colonel Kotikov with queries and protests. He answered with one eternal refrain. The suitcases were of the "highest diplomatic character". I retorted that they were not being sent by the Soviet Embassy but by the Soviet Government Purchasing Commission in Washington. He asserted that, whatever the origin, they were covered by diplomatic immunity. But I am sure he knew that one of these days I would try to search the containers.

They had grown to such importance in the eyes of the Russians that they asked for a locked room. The only door in the warehouse with a lock was that to the compartment in which the first-aid packets were

kept. I put it at Colonel Kotikov's disposal. The couriers took turn about. First one and then the other slept on top of the suitcases, while his companion stood guard. Perhaps unjustly, I suspected them of stealing our morphine. They were the only persons left in the storeroom without witnesses.

At four o'clock one cold afternoon in March 1943, Colonel Kotikov said to me: "I want you dinner tonight." Then he doubled the surprise by whisking from his ulster pockets two slender bottles with long, sloping necks. "Vodka!"

The invitation was accepted with pleasure and also curiosity. For almost a year now I had associated with Colonel Kotikov and his staff, but I had never dined with them. As a matter of routine they lunched with us at the Officers' Club. But at night they disappeared, wandering off by themselves to other restaurants or the dining-room of the Rainbow Hotel, where they were quartered. So far as I knew, this was the first time they had bidden an American to an evening repast...

At the Officers' Club we had noticed that the Russians were extremely absent-minded about picking up bar checks. These oversights were costing us around \$80 monthly, and we decided to remedy the situation. In the club were several slot-machines, for which the Russians had a passion. We decided to "set aside" one machine to cover their libations. Thanks to the one-armed mechanical bandit, we contrived after all to make them settle for their liquor.

Now, of a sudden, they asked me to dinner and were offering vodka, free, as an allurement. I could not help wondering why. Acting on a hunch, I excused myself from riding to town with Colonel Kotikov in his Pontiac. I decided I would take my staff car, which had a soldier driver; in case of need, I preferred to have mobility. I was directed to join the party at seven o'clock at a restaurant in Great Falls known as "Carolina Pines".

There was not much time, so I hastened to ask our maintenance chief whether the Russians were planning any flights. He answered yes; they had a C-47 staged on the line, preparing to go. It was being warmed up with Nelson heaters - large canvas bags, fed with hot air, which were made to slip over motors and propellers. (Winter temperatures at the airfield could be as severe as at Fairbanks, ranging from 20 to 70 degrees below zero. Oil would sometimes freeze as hard as stone, and two to four hours were required to thaw out an engine.)

The Russians wielded a high hand at the airbase, but I had one power they respected. Though Lend-Lease planes were delivered to them at Great Falls, they were flown by American pilots as far as Fairbanks. No American pilot could leave without clearance, and I had authority to ground any plane at any time. In my absence, permission was given by the Flight Officer of the Day. I called the control tower, gave the number of the restaurant, and issue a positive order that no cargo plane was to be cleared for Russia except by myself.

Occupied by these thoughts, I drove to "Carolina Pines"... The gathering consisted of five Russians and a single American, myself. Colonel Kotikov acted as host, and among the guests was Colonel G. E. Tsvetkov, head of the fighter-pursuit division of the Soviet Purchasing Commission...

With the vodka under our belts, we moved to chairs about the table. But at 8.30, when we were two-thirds finished, the waitress handed me a message in pencil. It notified me to call the control tower at once.

At a public telephone, in the corridor, I learned that the C-47 had warmed up and that a couple of newly-arrived couriers were demanding clearance. Without returning to the dining room, I threw on my great-coat, scuffled down the stairs and ordered the driver to race full speed for the hangars, four miles away.

It was mid-winter in Great Falls. Snow was deep on the ground, and stars glittered frostily in a crystal

sky. The temperature that night was about 20 degrees below zero.

As we neared the Lend-Lease plane there loomed up, in its open door, the figure of a burly, barrel-chested Russian. His back was propped against one jamb of the portal. An arm and a leg were stretched across to the opposite side. I clambered up and he tried to stop me by pushing hard with his stomach. I pushed back, ducked under his arm, and stood inside the cabin.

It was dimly lighted by a solitary electric bulb in the dome. Faintly visible was an expanse of black suitcases, with white ropes and seals of crimson wax. On top of them, reclining on one elbow, was a second Russian, slimmer than the first, who sprang to his feet as I entered. They were mature men, in the forties, and wore beneath leather jackets the inevitable blue suits of Russian civilians. Under each coat, from a shoulder holster, protruded the butt of a pistol.

It had been no more than a guess that a fresh installment of suitcases might be due. My first thought was: "Another bunch of those damn things!" The second was that if I was ever going to open them up, now was as good a time as any. With signs I made the Russians understand what I intended to do.

Promptly they went insane. They danced. They pushed at me with their hands and shrieked over and over the one English word they appeared to know. It was "deplomateek!" I brushed them aside and took from my pocket a metal handle containing a safety razor blade which I carry in preference to a pocket knife.

Sensing its purpose, the lean courier flung himself face down across the suitcases, with arms and legs outspanned to shield as many as possible with his body. I dragged one of the containers from under him, and he leaped up again as I started to saw through the first cord. At this sight their antics and shouts redoubled.

While opening the third suitcase, I had a mental flash that brought sweat to my forehead. The Russians were half mad with fury and terror. They were on both sides of me, in front and behind. Supposing in desperation, one of them shot me in the back? There would be no American witnesses, and my death could be passed off as a "deplorable accident".

I called a Yank soldier who was on patrol thirty feet away. He crunched over through the snow. Bending down from the plane, I asked whether he had had combat experience. He answered that he had, in the South Pacific. I stooped lower and murmured:

"I'm going to open more of this baggage. I want you to watch these two Russians. Both are armed. I don't expect any trouble. But if one of them aims a gun at me, I want you to let him have it first. Understand?"

After a moment's thought, he looked me in the eye and said, "Sir, is that an order?" I replied that it was an order. He clicked the bolt of his rifle to snap a cartridge into the chamber and brought the weapon to ready. He was tall enough for his head to clear the doorsill. The muzzle was pushed forward to command the interior.

One courier jumped from the plane and sprinted for the hangars, where there were telephones. The other, his face contorted as if to keep from crying, began reknitting the cords I had severed. There was little trouble getting into the suitcases because the Russians had brought the cheapest on the market. They had no locks, but only pairs of clasps. All were consigned to the same address. The entry on the bill of lading read: "Director, Institute of Technical and Economic Information, 47 Chkalovskaya, Moscow 120, U.S.S.R."

I decided to attempt only a spot check - one suitcase, say, in every three. I examined perhaps eighteen out of fifty. Otherwise the search was fairly thorough, as I was looking for morphine. (Incidentally, none was found.) The light was so weak that it was impossible to decipher text without using a flash

lamp. I had to take off my gloves, and my fingers grew numb with cold.

Using one knee as a desk, I jotted notes with a pencil on two long envelopes that happened to be in my pocket...

The first thing I unearthed made me snort with disgust. It was a ponderous tome on the art of shipping four-legged animals. Was this the kind of twaddle American pilots were risking their lives to carry? But in the back I found a series of tables listing railroad mileages from almost any point in the United States to any other.

Neatly packed with the volume were scores of roadmaps, of the sort available at filling stations to all comers. But I made a note that they were "marked strangely". Taken together, they furnished a country-wide chart, with names and places, of American industrial plants. For example, Pittsburgh entries included "Westinghouse" and "Blaw-Knox".

The next suitcase to be opened was crammed with material assembled in America by the official Soviet news organ, the Tass Telegraph Agency. A third was devoted to Russia's government-owned Amtorg Trading Corporation of New York. One yielded a collection of maps of the Panama Canal Commission, with the markings to show strategic spots in the Canal Zone and distances to islands and ports within a 1,000-mile radius.

Another was filled with documents relating to the Aberdeen Proving Ground, one of the most "sensitive" areas in the war effort. Judging by their contents, various suitcases could have been labeled under the heads of machine tools, oil refineries, blast furnaces, steel foundries, mining, coal, concrete, and the like. Other folders were stuffed with naval and shipping intelligence. There seemed to be hundreds of commercial catalogues and scientific magazines... There were also sheafs of info about Mexico, Argentina and Cuba.

There were groups of documents which, on the evidence of stationery, had been contributed by the Departments of Agriculture, Commerce and State. All such papers had been trimmed close to the text, with white margins removed. I decided that this was done either to save weight, or to remove "Secret", "Confidential" or "Restricted" stamps that might have halted a shipment, or for both reasons...

Then I copied the legend: "From Hiss". I had never heard of Alger Hiss, and made the entry because the folder bearing his name happened to be second in the pile. It contained hundreds of photostats of what seemed to be military reports...

A suitcase opened midway in the search appeared to contain nothing but engineering and scientific treatises. They bristled with formulae, calculations and professional jargon. I was about to close the case and pass on when my eye was caught by a specimen of stationery such as I had never before seen.

Its letterhead was a magic incantation: "The White House, Washington". As prospective owner of an 80-acre tract along the shore of Washington State, I was impressed by the lordly omission of the capitals, "D.C.". Under the flashlight I studied this paper with attention. It was a brief note, of two sheets, in a script which was not level but sloped upward to the right. The name to which it was addressed, "Mikoyan", was wholly new to me. (By questioning Colonel Kotikov later, I learned that A. I. Mikoyan at the moment was Russia's No. 3 man, after Premier Stalin and Foreign Commissar Molotov. He was Commissar of Foreign Trade and Soviet boss of Lend-Lease.)

A salutation, "My dear Mr Minister", led to a few sentences of stock courtesies. One passage, of eleven words, in the top line of the second page, impressed me enough to merit a scribble on my envelope. That excerpt ran thus: "\_\_\_\_ had a hell of a time getting these away from Groves."

The last two words should not be taken as referring to Major General Leslie R. Groves himself. What they meant, probably, was "from the Groves organization". The commander of the Manhattan Engineer

District, later the Manhattan Project, was almost unique in the Washington hierarchy for his dislike and suspicion of Russia...

The first thing I had done, on finding the White House note, was to flip over the page to look for a signature. I penciled it on my envelope as "H. H." This may not have been an exact transcription. In any case, my intention is clear. It was to chronicle, on the spot, my identification of the author as Harry Hopkins. It was general usage at Great Falls and elsewhere to refer to him as "Harry Hopkins", without the middle initial.

I remember distinctly having had to remove that letter from a metal clip. It held two other exhibits - obviously the things which [someone] had such difficulty in "getting away from Groves". One was a thick map. When unfolded, it proved to be as wide as the span of my extended arms. In large letters it bore a legend which I recorded: "Oak Ridge, Manhattan Engineering District".

The other was a carbon copy of a report, two or three pages long, which was dated Oak Ridge. If it had a signature, I did not set it down. At the top of the first page, impressed with a rubber stamp, or typed, was the legend: "Harry Hopkins" followed by the title "Special Asst. Co-ordinator" or "Administrator". I gathered that this particular copy had been earmarked for Mr Hopkins. In the text of the report was encountered a series of vocables so outlandish that I made a memo to look up their meaning. Among them were "cyclotron", "proton" and "deuteron". There were curious phrases like "energy produced by fission" and "walls five feet thick, of lead and water, to control flying neutrons".

Probably no more than 200 men in all the country would have been capable at the time of noting down these particular expressions out of their own heads. The paper on which I made my notes was later submitted to the Bureau of Standards for a test of its age.

For the first time in my life, I met the word "uranium". The exact phrase was "Uranium 92". From a book of reference I learned afterward that uranium is the 92nd element in atomic weight.

At the time of this episode I was as unaware as anyone could be of Oak Ridge, the Manhattan District and its chief, General Groves. The enterprise has been celebrated as "the best guarded secret in history". It was superlatively hush-hush, to the extreme that Army officers in the "know" were forbidden to mention it over their private telephones inside the Pentagon. General Groves has testified that his office would have refused to send any documents to the White House, without authority from himself, even if it was requested personally by the President...

**F**rom the outset, extraordinary secrecy and security measures have surrounded the project," declared Henry L. Stimson, Secretary of War, in commenting on the first military use of the atom bomb. "This was personally ordered by President Roosevelt." Mr Roosevelt's orders, he innocently added, "have been strictly complied with."<sup>1</sup>

Yet Russians with whom I worked side by side at Great Falls knew about the A-bomb at least as early as March 1943, and General Groves had reason to distrust the Russians in October 1942! In common with almost all Americans, I got the first hint of the existence of the atom bomb from the news of Hiroshima, which was revealed on August 6, 1945 by President Truman.

I visited Washington in January 1944 to bring to the attention of the highest authorities what seemed to me to be treacherous violations of security in the Pipeline. I got exactly nowhere in the State Department or elsewhere. It was not until I heard the announcement of the atomic blast in Russia on September 23, 1949, that I finally had the good fortune of meeting Senator Bridges and Fulton Lewis - but more of that later.

It was after eleven o'clock, and my checking job was virtually done, when Colonel Kotikov burst into the cabin of the plane. He wanted to know by whose authority I was committing this outrage [see previous issue] and bellowed that he would have me removed. I answered that I was performing my duty, and, just to show how things stood, opened two or three extra suitcases in his presence. I left the C-47 and with a nod of thanks dismissed my sentinel.

As I crossed the field toward the barracks, Colonel Kotikov fell in beside me. No doubt he reflected that he was in no position to force an issue. He may also have realized that I understood the gravity of almost nothing I had seen. All that mattered to him was getting the suitcases off to Moscow. Anxiously he inquired what I intended to do.

If I had known what I do today, I should have grounded the transport, but in the end it went on its way to Russia.

Colonel Kotikov asked me to open no more suitcases until instructions came from the War Department. He said he hoped he would not have to get me transferred. I expected to be fired, and went so far as to pack my gear. But I received no communication from the War Department, and gathered at last that Colonel Kotikov had made no complaint. Perhaps, I began to think, he did not dare.

I reported to Colonel George F. O'Neill, security officer of the 34th Sub-Depot at Gore Field, about the fifty suitcases I had examined. He was interested enough to pass the story on to his superior officer in Spokane. There was no reply, even after Colonel O'Neill made a second attempt. Apparently it was not considered good form to cast reflections on the integrity of our ally...

### **"DON'T MAKE A BIG PRODUCTION..."**

One morning in April 1943, Colonel Kotikov asked whether I could find space for an important consignment of nearly 2,000 pounds. I said, "No, we have a quarter of a million pounds' backlog already."

He directed me to put through a call to Washington for him, and spoke for a while in his own tongue. Then he put a hand over the mouthpiece and confided to me in English, "Very special shipment - experimental chemicals - going through soon."

There was an interval of Slavic gutturals, and he turned to me again. "Mr Hopkins - coming on now," he reported. Then he gave me the surprise of my life. He handed me the phone and announced, "Big boss, Mr Hopkins, wants you."

It was quite a moment. I was about to speak for the first time with a legendary figure of the day, the top man in the world of Lend-Lease in which I lived. I have been careful to keep the following account as accurate in substance and language as I can. My memory, normally good, was stimulated by the thrill of the occasion. Moreover, the incident was stamped on my mind because it was unique in my experience of almost 25 months at Newark and Great Falls.

A bit in awe, I stammered, "Jordan speaking."

The male voice began at once. "This is Mr Hopkins. Are you my expediter out there?"

I answered that I was the United Nations Representative at Great Falls, working with Colonel Kotikov.

Under the circumstances, who could have doubted that the speaker was Harry Hopkins? Friends have since asked me whether it might not have been a Soviet agent who was an American. I doubt this, because his next remark brought up a subject which only Mr Hopkins and myself could have known.

He asked, "Did you get those pilots I sent you?"

"Oh yes, sir," I responded. "They were very much appreciated, and helped us in unblocking the jam in the Pipeline. We were accused of going out of channels, and got the dickens for it."

Mr Hopkins let that one go by, and moved on to the heart of things. "Now, Jordan," he said, "there's a certain shipment of chemicals going through that I want you to expedite. This is something very special."

"Shall I take it up," I asked, "with the Commanding Colonel?"

"I don't want you to discuss this with anyone," Mr Hopkins ordered, "and it is not to go on the records. Don't make a big production of it, but just send it through quietly, in a hurry."

I asked how I was to identify the shipment when it arrived. He turned from the phone, and I could hear his voice: "How will Jordan know the shipment when it gets there?" He came back on the line and said, "The Russian Colonel out there will designate it for you. Now send this through as speedily as possible, and be sure you leave it off the records!"

Then a Russian voice broke in with a demand for Colonel Kotikov. I was full of curiosity when Kotikov had finished, and I wanted to know what it was all about and where the shipment was coming from. He said there would be more chemicals and that they would arrive from Canada.

"I show you," he announced.

Presumably, after the talk with Mr Hopkins, I had been accepted as a member of the 'lodge'. From his bundle on war chemicals the Colonel took the folder called "Bomb Powder". He drew out a paper sheet and set a finger against one entry. For a second time my eyes encountered the word "Uranium". I repeat that in 1943 it meant as little to me as to most Americans, which was nothing.

This shipment was the one and only cash item to pass through my hands, except for private Russian purchases of clothing and liquor. It was the only one, out of a tremendous multitude of consignments, that I was ordered not to enter on my tally sheets. It was the only one I was forbidden to discuss with my superiors, and the only one I was directed to keep secret from everybody.

Despite Mr Hopkins' urgency, there was a delay of five weeks. On the morning of June 10th, I caught sight of a loaded C-47 which was idling on the runway. I went over and asked the pilot what was holding him up. He said he understood some kind of special shipment was still to come. Seven years afterward, the pilot identified himself to the press as Air Forces Lieutenant Ben L. Brown, of Cincinnati.

I asked Colonel Kotikov about the plane, and he told me the shipment Mr Hopkins was interested in had just arrived at the railroad yards, and that I should send a truck to pick it up. The consignment was escorted by a Russian guard from Toronto. I set down his name, and copied it later in my diary. It was Vladimir Anoufrieu. I identified him with the initials "C.C." for "Canadian Courier".

Fifteen wooden cases were put aboard the transport, which took off for Moscow by way of Alaska. At Fairbanks, Lieutenant Brown has related, one box fell from the plane, smashing a corner and spilling a small quantity of chocolate-brown powder. Out of curiosity, he picked up a handful of the unfamiliar grains, with a notion of asking somebody what they were. A Soviet officer slapped the crystals from his palm and explained nervously, "No, no - burn hands!"

Not until the latter part of 1949 was it definitely proved, from responsible records, that during the war Federal agencies delivered to Russia at least three consignments of uranium chemicals, totaling 1,465 pounds, or nearly three-quarters of a ton. Confirmed also was the shipment of one kilogram, or 2.2 pounds, of uranium metal at a time when the total American stock was 4.5 pounds.

Implicated by name were the Lend-Lease Administration, the Department of Commerce, the Procurement Division of the Treasury and the Board of Economic Warfare. The State Department became involved to the extent of refusing access to files of Lend-Lease and its successor, the Foreign Economic Administration.

The first two uranium shipments traveled through Great Falls by air. The third was dispatched by truck and railway from Rochester, NY, to Portland, Oregon, and then by ship to Vladivostok. The dates were March and June 1943, and July 1944. No doubt was left that the transaction discussed by Mr Hopkins and myself was the one of June 1943.

This was not merely the largest of our known uranium deals with the Soviet Union, it was also the most shocking. There seemed to be no lengths to which some American officials would not go in aiding Russia to master the secret of nuclear fission. For four years, monopoly of the A-bomb was the cornerstone of our military and overseas policy, yet on September 23, 1949, long in advance of Washington estimates, President Truman announced that an atomic explosion had occurred in the Soviet Union.

In behalf of national security, the Manhattan Project during the spring of 1943 clapped an embargo on American exports of uranium compounds. But zealots in Washington appear to have resolved that Russia must have at all costs the ingredients for atomic experiment. The intensely pro-Soviet mood of that time may be judged from echoes in later years.

For example, there was Joseph E. Davies, Ambassador to the Soviet Union in 1936-39, and author of a book and movie of flagrant propaganda, *Mission to Moscow*. In an interview with the *Times-Herald of Washington* for February 18, 1946, he was quoted as saying, "Russia, in self-defense, has every moral right to seek atomic bomb secrets through military espionage if excluded from such information by her former fighting allies!" There also was Professor Harold C. Urey, American scientist, who sat in the innermost circle of the Manhattan Project. Yet on December 14, 1949, in a report of the Atlantic Union Committee, Dr Urey said that Major Jordan should be court-martialed if he had removed anything from planes bound for Russia.

When American supplies were cut off, the device of out-maneuvering General Groves was to procure the materials clandestinely from Canada. Not until 1946 did the commander of the Manhattan Project learn from the Un-American Activities Committee that his stockade had been undermined.

My share in the revelation was testimony under oath, leading to one conclusion only: that the Canadian bypass was aided by Mr Hopkins. At his direction, Lend-Lease issued a certificate of release without which the consignment could not have moved. Lend-Lease channels of transportation and Lend-Lease personnel, such as myself, were used. Traces of the scheme were kept off Lend-Lease books by making it a 'cash' transaction. The shipment was paid for with a check of the Amtorg Trading Corporation.

Because of the initial branch of the airlift to Moscow was under American control, passage of the chemicals across United States territory could not be avoided, in Alaska if not Montana. On account of that fact - the cash nature of the project - it was necessary to obtain an export license from the Board of Economic Warfare. Such a document, covering a shipment of American origin, was first prepared. It was altered, to comply with the Canadian maneuver, by some BEW official whose identity has been concealed by the State Department. As amended, the license was issued on April 29, 1943. Its serial number was C-1643180.

But two facts were forgotten: (a) public carriers use invoices, and (b) the Air Forces kept tallies not only at Great Falls but Fairbanks.

By diligent searching, freight and airway bills yielded incontestable proof that 15 boxes of uranium chemicals were delivered at Great Falls on June 9, 1943, and were dispatched immediately, in a Lend-

Lease plane, to the Soviet Union.

The shipment originated at Eldorado Mining & Refining, Ltd, of Great Bear Lake, and was sent through Port Hope, Ontario. It was authorized by a Canadian arms export permit, No. OF1666. The carrier was the Chicago, Milwaukee, St Paul & Pacific Railway. Listed as consignee was Colonel A. N. Kotikov, resident agent of the Soviet Government Purchasing Commission at Gore Field, Great Falls.

The story behind the story is as follows. On February 1, 1943, Hermann H. Rosenber of Chematar, Inc., New York City, received the first inquiry about uranium ever to reach his office. The applicant was the Soviet Purchasing Commission, which desired 220 pounds of uranium oxide, 220 pounds of uranium nitrate, and 25 pounds of uranium metal.

At that date Oak Ridge was under construction, but would not be in operation for another year.

Six days earlier the War Production Board had issued General Reference Order M-285, controlling the distribution of uranium compounds among domestic industries like glass, pottery and ceramics. A loophole was left by overlooking the export of such materials for war purposes. The Russians claimed that they had urgent military need for uranium nitrate in medicinal research, and for uranium oxide and metal as alloys in hardening gun-barrel steel. There was nothing for the US to do but grant an OK, since we did not want to imply that we were suspicious of Russia's request.

Uranium metal was unavailable. On March 23, at Rosenberg's instance, the S. W. Shattuck Chemical Co. of Denver shipped four crates, weighing 691 pounds, to Colonel Kotikov at Great Falls. The Burlington Railroad's bill of lading described the contents merely as "Chemicals", but it was accompanied by a letter from Rosenberg to Kotikov designating the contents as 220 pounds of uranium nitrate and 200 (not 220) pounds of uranium oxide. Since it was a Lend-Lease transaction, defrayed with American funds, no export license was required. The cargo was dispatched without friction along the Pipeline.

But the War Production Board, from which clearance had been sought, alerted the Manhattan Project. It was too late to halt the Shattuck sale. General Groves reluctantly approved it on the ground that it would be unwise to 'tip off' Russia as to the importance of uranium chemicals - a fact with which Moscow was only too familiar.

During the investigation, I was embarrassed by questions as to why tables of exports to the Soviet Union contained no mention of uranium. The Shattuck consignment was legitimate. It had been authorized by Lend-Lease, the War Production Board and the Manhattan Project.

Some months later I ran into John F. Moynihan, formerly of the Newark News editorial staff. A Second Lieutenant at the Newark Airport when I was there, he had risen to Colonel as a sort of 'reverse press-agent' for General Groves. His duty was not to foster publicity but prevent it.

"I heard you floundering about," he said, "and wished I could tell you something you didn't know. I was sent to Denver to hush up the records in the Shattuck matter. It was hidden under the phrase, 'salts and compounds', in an entry covering a different metal."

General Groves moved rapidly to stop the leak through which the Shattuck boxes had slipped. By early April he had formed a nationwide embargo by means of voluntary contracts with chemical brokers. They promised to grant the United States first right to purchase all uranium oxide, uranium nitrate and sodium uranate received by the contractors.

The uranium black-out was discovered by Rosenberg when he tried to fill another order from the Soviet Purchasing Commission, for 500 pounds each of uranium nitrate and uranium oxide. On April 23, 1943, Rosenberg was in touch with the Canadian Radium & Uranium Corp. of New York, which was exclusive sales agent for Eldorado Mining & Refining, Ltd, a producer of uranium at Great Bear Lake.

An agreement to fill the Soviet order was negotiated with such dispatch that in four days Rosenberg was able to report victory to the Purchasing Commission. The shipment from Ontario to Great Falls and Moscow followed in due course.

The Port Hope machination had the advantage, among other things, of bypassing the War Production Board, which was sure to warn the Manhattan Project if it knew the facts, but could be kept in ignorance because its jurisdiction ran only south of the border.

General Groves was advised at once of the Soviet application for 1,000 pounds of uranium salts. He was not disturbed, being confident the embargo would stand. After declining to endorse the application, he approved it later in the hope of detecting whether the Russians could unearth uranium stocks which the Manhattan Project had overlooked. American industries were consuming annually, before the war, upwards of 200 tons of uranium chemicals.

"We had no expectation," General Groves testified December 7, 1949, "of permitting that material to go out of this country. It would have been stopped."<sup>2</sup>

So far as the United States was concerned, the embargo held fast. The truth that it had been side-stepped by means of resort to Canadian sources did not come to the General's knowledge until three years later.

Another violation of atomic security was represented by the third known delivery to Russia, in 1944. It proved to be uranium nitrate. During May of that year, Colonel Kotikov showed me a warning from the Soviet Purchasing Commission to look out for a shipment of uranium, weighing 500 pounds, which was to have travel priority. The Colonel was soon returning home. As the climax of his American mission, he proposed to fly the precious stuff to Moscow with his own hands.

Disguised as a "commercial transaction" within American territory, the deal was managed by Lend-Lease. Chematar and Canadian Radium & Uranium were abandoned in favor of the Procurement Division of the Treasury Department, although the Treasury, under regulations, had no authority to make uranium products available to the Soviet Union.

Contractors were asked to bid, and the winner was the Eastman Kodak Company. Somewhere in this process, the expected 500 pounds shrank to 45. Eastman Kodak reported the order to the War Production Board as a domestic commercial item.

Whatever the motive, it was determined not to send the compound by air. After a Treasury inspection in Rochester, the MacDaniel Trucking Company drove it to the Army Ordnance Depot at Terre Haute, Indiana, arriving July 24. The shipment turned up in freight car No. 97352 of the Erie Railroad, and got to North Portland, Oregon, on August 11. By means of shifts not yet divulged, the uranium nitrate found itself aboard a Russian steamship, Kashirstroi, which left for Vladivostok on October 3. Colonel Kotikov, who had planned a triumphal entry into Moscow with a quarter-ton of "bomb powder" as a trophy, gave up the project in disgust on learning that the shipment would be only 45 pounds.

In charge of uranium purchases for the Manhattan Project in 1944 was Dr Phillip L. Merritt. Appearing January 24, 1950 before the Un-American Activities Committee, Dr Merritt swore he was taken by surprise, a day earlier, on discovering for the first time that the Eastman Kodak order had been shipped to Russia by way of Army Ordnance.

General Groves was likewise uninformed. Asked as a witness whether it was possible for uranium shipments to have been made in 1944, he answered, "Not if we could have helped it, and not with our knowledge of any kind. They would have had to be entirely secret, and not discovered."<sup>3</sup> He declared there was no way for the Russians to get uranium products in this country "without the support of US authorities in one way or another".<sup>4</sup>

The Soviet Purchasing Commission appears to have had instructions to acquire without fail 25 pounds of uranium metal, which can be extracted from uranium salts by a difficult process requiring specialized equipment. Supported or advised by Lend-Lease, the commission for a whole year knocked at every available door, from the Chemical Warfare Service up to Secretary Stimson. As a matter of fact, uranium metal was then non-existent in America, and for that reason had not been specified in the Manhattan Project's embargo or named as a "strategic" material.

Stimson closed a series of polite rebuffs with a letter of April 17, 1944, to the chairman of the Purchasing Commission, Lt General Leonid G. Rudenko. But Moscow was stubborn. Under Soviet pressure, the commission, or its American friends, had an inspiration. Why not have the uranium made to order by some private concern?

As usual, a roundabout course was taken. The commission first approached the Manufacturers Chemical Co., 527 Fifth Avenue, New York, which passed the order along to A. D. Mackay, Inc., 198 Broadway. By the latter it was farmed out to the Cooper Metallurgical Laboratory in Cleveland. According to Mr Mackay, neither he nor the Cooper concern suspected that their customer was the Soviet Union.

But Mackay reported the deal to the War Production Board, which warned the Manhattan Project. The latter's expert on rare metals, Lawrence C. Burman, went to Cleveland, it is related, and urged the Cooper firm to make sure that its product was of "poor quality". He did not explain why. But the metal, of which 4.5 pounds was made, turned out to be 87.5 per cent pure as against the stipulated 99 per cent.

Delivery to the Soviet Union was then authorized of a small sample of this defective metal, to represent "what was available in the United States". Actually shipped was one kilogram, or 2.2 pounds. The Purchasing Commission abruptly silenced its demands for pure uranium. But the powers that be found it suitable to omit this item, as well as the Rochester sale, from the 1944 schedule of exports to Russia.

From the start, in contrast to the atmosphere prevailing in Washington, the Manhattan Project was declared by General Groves to have been "the only spot I know that was distinctly anti-Russian".<sup>5</sup> Attempts at espionage in New York, Chicago and Berkeley, California, were traced to the Soviet Embassy. They convinced General Groves in October 1942 that the enemies of our atomic safeguards were not Germans or Japanese, but Russians. "Suspicion of Russia was not very popular in some circles [in Washington]," he stated. "It was popular in Oak Ridge, and from one month of the time I took over we never trusted them one iota. From that time on, our whole security was based on not letting the Russians find out anything."<sup>6</sup>

That the Russians found out everything from alpha to omega has been established by volumes of proof. Through trials in Canada, England and the United States there has been revealed the existence of an espionage network so enormously effective that Russia, scientists calculated, "should have been able to make a bomb considerably before September 1949". The network chief was the former Soviet Vice Consul in New York, Anatoli A. Yakovlev, who fled in 1946.

## **THE STORY OF THE "HEAVY WATER"**

What is popularly known as "heavy water" is technically called deuterium oxide. It is in crystal form, not liquid.

In alleging medical and other grounds for its needs of uranium oxide and uranium nitrate, Russia had taken care to observe an appearance of truth, for such use is not unknown to therapeutics. It had been tried out in throat sprays and lent its name to Uranwein, a German specific against diabetes. Uranium

oxide had been tested as an alloy for toughening steel, but it was found difficult to handle and had erratic results. Therefore when Moscow asked for heavy water, they let the cat out of the bag. Except for curious experiments in retarding plant growth, heavy water boasts only one useful property: it is the best of moderators for slowing down the speed of neutrons in nuclear reactions.

Records in evidence<sup>7</sup> prove that on August 23, 1943, Hermann Rosenberg of Chematar received an application from the Soviet Purchasing Commission for 1,000 grams of deuterium oxide. The purpose stated was "research". A supplier was found in the Stuart Oxygen Co. of San Francisco, which shipped the merchandise on October 30 by railway express to Chematar's New York office. Rosenberg forwarded the consignment to the Purchasing Commission in Washington, which dispatched it on November 29, by way of the Pipeline, to Rasnoimport, USSR, Moscow U-1, Ruybjshova-22.

The order was packed with as much tenderness as if it had been a casket of jewels. Forty pyrex ampoules, each containing 25 grams, were enclosed in mailing tubes and wrapped in layers of cotton. The ampoules were divided in lots of 10 among four cartons, which were placed, with further precautions against damage, in a large wooden box. This was strapped and sealed. The overall weight was 41.12 pounds. The cost of the fluid content was that of expensive perfumes - \$80 an ounce.

The export of heavy water to the Soviet Union was approved by a release certificate, No. 366, dated November 15, with the signature of William C. Moore, Division for Soviet Supply, Office of Lend-Lease Administration.

If General Groves had been consulted, the heavy water would not have left this country. Had it been known at the time, he said, that 1,000 grams were available, unquestionably he would have bought the treasure himself. He added, "If it had been pure."§ That it was between 99.7 and 99.8 per cent pure was attested by an independent analysis made for Rosenberg in the laboratories of Abbot A. Hanks, Inc., San Francisco.

At the beginning of 1945, the Soviet Purchasing Commission placed with Rosenberg a second order for heavy water. Only 100 grams were sought. He applied once more to the Stuart concern, which expressed the 'liquid diamonds' to Chematar on February 7. One week later Rosenberg forwarded the parcel to the commission. Its subsequent adventures have not been traced. In August of the same year, Rosenberg was naturalized as an American citizen...

Was one kilogram of heavy water and were mere hundreds of pounds of uranium chemicals too insignificant for important use?

Specialists agree that the quantities delivered were inadequate for producing one A-bomb or even one experimental pile. They point out, however, that scarcely any fraction of a substance can be too small for laboratory research. The head of a pin could not have been formed with the first plutonium ever made. From 500 micrograms were determined most of the properties and the chemical behavior of an element which 18 months earlier had been entirely unknown.

On the presumption that 1,465 pounds of uranium salts were contributed to the Soviet Union, metallurgists estimate that they were reducible in theory to 875 pounds of natural uranium, which in turn would yield 6.25 pounds of fissionable U-235. But 4.4 pounds of the latter, or nearly two pounds less, are capable of producing an atomic explosion. Authority for this assertion may be found in the celebrated report which Dr Henry De-Wolf Smyth of Princeton University wrote at the request of General Groves and published in 1945.

The Shattuck and Eldorado purchases totaled 1,420 pounds. With their third requisition, the Russians expected so confidently to acquire another 500 pounds that papers to that effect were drafted and sent to us in Montana. If the full amount had been available, instead of 45 pounds, the aggregate would have been 1,920 pounds, or virtually one ton.

At his Paris laboratory, while chief of the Atomic Energy Commission of France, Frederic Joliot-Curie built an experimental pile to which he gave the affectionate name of "Zoe". It actually ran, though the wattage was feeble. The quantity of uranium crystals utilized, said Dr Joliot-Curie, was "something in the order of one ton".

It seems fair to take into account not merely what the Russians got, but what they tried to get. With Communist tenacity and ardent support from both White House and Lend-Lease, the Soviet Purchasing Commission strove again and again to obtain 8-1/2 tons each of uranium oxide and uranium nitrate, plus 25 pounds of uranium metal. The campaign started in February 1943, and persisted until the Russians were squelched by Secretary Stimson during April 1944.

There are memorable instances of what can be achieved with less than 17 tons of uranium powders. One was a model atomic pile which went into operation at Chicago University on December 2, 1942. "So far as we know," Dr Smyth recounts, "this was the first time that human beings ever initiated a self-maintaining nuclear chain reaction." With a power level of 200 watts, the device served as a pilot plant for the Hanford Engineer Works. The uranium supply available to them was six tons.

Even earlier, before the Manhattan Project was dreamed of, a group of scientists at Columbia University began a course of hazardous experiments under the leadership of two foreign-born savants, Leo Szilard of Hungary and Enrico Fermi of Italy. They were so ill-supported with cash that 10,000 pounds of uranium oxide had to be 'rented' at a nominal fee of 30 cents a pound from Boris Pregel, president of the Canadian Radium & Uranium Corp. of New York, who was later unjustly made a scapegoat by the press for the secret Canadian shipment.

Here was done all the preparatory work moving toward the eventual creation of the first man-made elements in history: neptunium-93 and plutonium-94. From the group's creative imagination rose in time the vast plutonium plant at Hanford, Washington, and, in a large sense, America's atom bomb itself. The materials of that triumph were not 17 but 10 tons of uranium compounds.

One of my lucky experiences was that of chancing upon the February 27, 1950 issue of the magazine, Life, shortly before my second appearance before the Un-American Activities Committee. I bore the copy with me to the witness chair. It contained an illustrated article on the atom bomb. I learned for the first time that a plutonium pile consists of giant blocks of graphite, surrounded by heavy walls of concrete and honeycombed with aluminum tubes. In these tubes, it was related, are inserted slugs of natural uranium, containing one per cent of U-235. The intensity of the operation was declared to be governed by means of cadmium rods.

Graphite, cadmium, aluminum tubes - where had I met these words before? In the Russian lists of Lend-Lease figures which I had added to the Jordan diary. Re-examining those pages, I discovered that during the four-year period 1942-45 we contributed to the Soviet Union 3,692 tons of natural graphite, 417 tons of cadmium metals, and tubes in an entry designating 6,883 tons of "aluminum tubes".

The figure for cadmium was arresting in view of its extreme scarcity in this country and because of the fact that it occurs, so far as we know, sparsely if at all in the Soviet Union. Under war stimulus, American production of cadmium rose from 2,182 short tons in 1940 to 4,192 in 1945.

It was interesting to find that in 1942-45 we shipped to Russia 437 tons of cobalt - a staggering amount when collated with American production, which was nothing before the war, and increased to 382 tons in 1942 and 575 in 1945.

That cobalt is valuable in the A-bomb for retarding radioactive emanations, and could be equally so in the hydrogen bomb, has been affirmed by a chemical engineer who was consultant to one of the war agencies. "Cobalt," says he, "was one of our highest scarcity materials. If I had known that so large a proportion was going to the Russians, I should have suspected them of being at work on the bomb."

Incidentally, cobalt was the first item to be restricted by President Truman in the Korean emergency.

Almost as curious was the discovery that we shipped to Russia more than 12 tons of thorium salts and compounds. Two other elements alone, besides uranium and plutonium, are fissionable. They are protoactinium and thorium. The former may be disregarded because of its rarity in nature. But thorium, which is relatively plentiful, is expected by physicists to rival uranium some day, or even supplant it, as a source of atomic energy.

Then there were cerium and strontium, of which the Soviet Purchasing Commission obtained 44 tons. Both metals, along with cadmium, thorium and cobalt, figured in Colonel Kotikov's dossier on experimental chemicals. They are useless for atomic purposes. But Russian scientists may have been working their way through the rare earths and metals on a well-founded suspicion that something momentous was afoot in that group.

Everyone is aware, of course, that these elements have industrial or military functions unrelated to the atom bomb, but Russia had a very critical interest in procuring A-bomb components from America. Red scientists are said to have been the first in Europe to announce the theory of nuclear fission. As America discovered at a cost of billions of dollars, it is a far cry from setting down speculations on paper to putting them in practice at the dimensions imposed by modern war. Thus the Kremlin was frantically inquisitive about large-scale production techniques developed by the Manhattan Project...

One ground for minimizing my evidence is a claim that Russia had abundant uranium of its own, in connection with massive radium deposits in the former area of Turkestan, the Kazakh Republic and the state of Tannu-Tuva, north of Mongolia. More than 30 years ago, it is said, Soviet physicists worked out the correct formula for separating uranium from radium. On the other hand, as atomic experts are fond of pointing out, "You can never have too much uranium."

If a blunder occurred, such objections proceed, it was not the shipment of minor quantities of uranium compounds to the Soviet Union, but the publication of Dr Smyth's book, which told not only how to make a nuclear bomb but how not to make one. The chief atomic authority of Norway, Gunnar Randers, is cited as having pronounced that the indiscretion of this publication saved Russia and every other country two years of research. According to Professor Szilard, "one half of the atomic bomb secret was given away when we used the bomb, and the other half when we published the Smyth report." After the espionage trials, however, one may ask whether the Smyth revelations were not more informative to the American public than to the Politburo...

In any event, it is heartening to know that, on the whole, our uranium embargo stood firm. Moscow was prevented from winning its grand objective of 17 tons, in contrast to the delivery of 15 tons of uranium chemicals to Great Britain which the Manhattan Project authorized. The steadfastness of the General Groves organization against Russia was the more admirable in that it was challenged by Mr Hopkins, with the power of the White House behind him. After the Un-American Activities Committee closed its hearing on March 7, 1950, I was examined searchingly by Government investigators. They tried to lure me into admitting a possibility, however faint, that the person to whom I spoke might have been Edward R. Stettinius, Jr, who had died five months earlier on October 11, 1949.

My answer was that never once, during my two years at Newark and Great Falls, did I hear so much as a mention of Stettinius, though reference to Hopkins was daily on the lips of the Russians.

It is common knowledge that on August 28, 1941, Stettinius succeeded Hopkins as titular chief of Lend-Lease, and held the post until September 25, 1943, when the agency was merged with kindred bodies into the Foreign Economic Administration, with Leo A. Crowley as Administrator.

But even the official biographer of Mr Hopkins does not hesitate to write:

"Hopkins knew that policy governing Lend-Lease would still be made in the White House and that the President would continue to delegate most of the responsibility to him. Stettinius was his friend and they could work together - and that was that."<sup>9</sup>

Another effort to clear Hopkins was based on the supposition that he acted in ignorance of what it was all about. Even if he helped the Russians to get A-bomb materials, the implication ran, it was the unsuspecting tool of Soviet cunning.

The Hopkins papers for Mr Sherwood's book were organized by Hopkins' longtime friend, Sidney Hyman. A fortnight after my first broadcast he was quoted as affirming that, until Hiroshima, Harry Hopkins had not "the faintest understanding of the Manhattan Project" and "didn't know the difference between uranium and germanium".

On the contrary, Harry Hopkins was one of the first men anywhere to know about the atom bomb. Dr Vannevar Bush chose Hopkins as his intermediary for presenting to Mr Roosevelt the idea of the atom bomb. It was in consultation with Hopkins that Dr Bush drafted the letter, for Mr Roosevelt's signature, which launched the A-bomb operation on June 14, 1941! Where do we learn this? In the official biography by Mr Sherwood, on pages 154 and 155. Finally, on page 704 we are told that the head of a state, Winston Churchill, "was conducting this correspondence on the atomic project with Hopkins rather than with the President, and that he continued to do so for many months thereafter".

A witness on the topic, General Groves testified that to the best of his recollection and belief he never met Harry Hopkins, talked with him on the telephone, or exchanged letters or dealt with anyone claiming to represent him. But the General thought it incumbent to remark, "I do know, of course, that Mr Hopkins knew about this project. I know that."<sup>10</sup>

An early symptom of White House obsession for 'reassuring Stalin' has been described by General Deane. In letters to American war agencies, dated March 7, 1942, Mr Roosevelt ordered that preferential position, in the matter of munitions, should be given to the Soviet Union over all other Allies and even the armed forces of the United States. Then and there, decided the former chief of the US Military Mission to Moscow, was "the beginning of a policy of appeasement of Russia from which we have never recovered and from which we are still suffering"<sup>11</sup>...

#### Endnotes

1. Stimson, Henry L. and Bundy, McGeorge, *On Active Service in Peace and War*, Harper, 1947.
2. "Hearings Regarding Shipments of Atomic Materials to the Soviet Union during World War II", Testimony of General Groves, December 7, 1949, House of Representatives Committee on Un-American Activities, US Government Printing Office, USA, p. 941.
3. *ibid.*, p. 945.
4. *ibid.*, p. 900.
5. *ibid.*, p. 948.
6. *ibid.*, p. 947.
7. "Hearings...", Testimony of Hermann H. Rosenberg, January 24, 1950, p. 1035.
8. "Hearings...", General Groves, p. 954.
9. Sherwood, Robert E., *Roosevelt and Hopkins: An Intimate History*, Harper, 1948, p. 560.
10. "Hearings...", General Groves, p. 947.
11. Deane, John R., *The Strange Alliance*, Viking, 1947, p. 89.