

# Halsey-Doolittle Raid, April 1942

## WAR DEPARTMENT HEADQUARTERS OF THE ARMY AIR FORCES WASHINGTON

July 9, 1942.

### GENERAL DOOLITTLE's REPORT ON JAPANESE RAID

April 18, 1942

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- " #14 - Eleventh Air Force

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#### OFFICERS AND MEN WHO RAIDED JAPAN ON APRIL 18, 1942.

Listed by plane crews in order of takeoff

Takeoff No. 1

Plane No. 40-2244

Crew from 34th Sqdn

P Col. James H. Doolittle 0-2771885  
CP Lt. Richard E. Cole 0-421602  
N Lt. Henry A. Potter 0-419614  
B Sgt Fred A. Breamer 6875923  
G Sgt Paul J. Leonard 6248728

Takeoff No. 1 landed near Tian Mushem, abt 70 miles north of Chuchow. Bailed out from 8,000 feet.

Takeoff No. 2  
Plane No. 40-2292

Crew from 37th Sqdn. 17th Gr.  
P Lt. Travis Hoover 0-421149  
CP Lt. William N. Fitzhugh 0-421067  
N Lt. Carl N. Wildner 0-352857  
B Lt. Richard W. Miller 0-432352  
G Sgt. Douglas V. Radney 6266909

Takeoff No. 2 landed on a point on the China coast near Ninypo.

Takeoff No. 3  
Plane No. 40-2270

Crew from 95th Sqdn. 17th Gr.  
P Lt. Robert Gray  
CP Lt. Jack E. Manch  
N Lt. Charles J. Ozuk  
B Sgt. Aden E. Jones  
G Cpl. Leland D. Faktor (deceased)

Takeoff No. 3 landed in the mountains near and southeast of Chuchow. Bailed out at 6200 feet.

Takeoff No. 4  
Plane No. 40-2282

Crew from 95th Sqdn. 17th Gr.  
P Lt. Everett W. Holstrom  
CP Lt. Lucien N. Youngblood  
N Lt. Harry C. McCool  
B Sgt. Robert J. Stephens  
G Cpl. Bert M. Jordan

Takeoff No. 4 proceeded to a point near and southeast of Shangjac, where all crew members bailed out safely.

Takeoff No. 5  
Plane No. 40-2283

Crew from 95th Sqdn. 17th Gr.  
P Capt. David M. Jones  
CP Lt. Rodney R. Wilder  
N Lt. Eugene F. McCurl -- Missing & believed to be dead  
B Lt. Denver V. Turelove  
G Sgt. Joseph W. Manske

Bailed out near and just southeast of Chuchow.

Takeoff No. 6  
Plane No. 40-2298

Crew from 95th Sqdn. 17th Gr.  
P Lt. Dean E. Hallmark  
CP Lt. Robert J. Meder  
N Lt. Chase J. Nielsen  
B Sgt. William J. Dieter  
G Sgt. David J. Thatcher

Crew landed in the Nangchang area near Poyang Lake.

Takeoff No. 7  
Plane No. 40-226

Crew from 95th Sqdn. 7th Gr.  
P Lt. Ted E Lawson  
CP Lt. Dean Davenport  
N Lt. Charles L. McClure  
B Lt. Robert S. Clever  
G Sgt. David J. Thatcher

Crew landed in the water off the coast of China, west of Shangchow.

Takeoff No. 8  
Plane No. 40-2244

Crew frm 95th Sqdn. 17th Gr.  
P Capt. Edwin J. York  
CP Lt. Robert G. Emmens  
N & B Lt. Nolan A. Herndon  
E S/Sgt. Theodore H. Laban  
G Sgt. David W. Pohl

Landed in Siberia, 40 miles north of Vladivostok; interned at Penza, Russia (alive).

Takeoff No. 9  
Plane No. 40-2250

Crew from 89th Recon. Sqdn.  
P Lt. Richard O. Joyce  
CP Lt. J. Royden Stork  
N Lt. He E. Crouch  
B Sgt. George E. Larkin, Jr.  
G S/Sgt. Edwin W. Horton,.

Bailed out 30 miles north of Chuchow.

Takeoff No. 10  
Plane No. 40-2303

Crew from 34th Sqdn. 17th Gr.  
P Lt. Harold F. Watson  
[...page missing...]

Bailed out 100 miles south of Poyang Lake.

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Takeoff No. 16  
Plane No. 40-2268

Crew from 89th Recon. Sqdn.  
P Lt. Donald G. Smith  
CP Lt. Griffith P. Williams  
N & B Lt. Howard A. Sessler  
E Sgt. Edwin J. Saylor  
G Lt. Thomas R. White (Medical Corps)

Landed in the water west of Shangchow.

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All pilots were given selected objectives consisting of steel works, oil refineries, oil tank farms, ammunition dumps, dock yards, munitions plants, airplane factories. They were also secondary targets in case it was impossible to reach the primary target. In almost every case, primary targets were bombed. The damage done far exceeded out most optimistic expectations. A high degree of damage resulted from the highly inflammable nature of Japanese construction.

The first flight of three airplanes, led by Lt. Hoover, covered the northern part of Tokyo; the second flight, led by Captain Jones covered the central part of Tokyo. The third flight, led by Captain York, covered the southern part of Tokyo. And the north central part of the Tokyo Bay area. The fourth flight, led by Captain Greening, covered the southern part of Kenegawa, the city of Yokohama and the Yokasuka Navy yard. The flight was covered over a fifty miles front in order to provide the greatest possible coverage to create the impression that there was a larger number of airplanes than were actually used, and to dilute any ground and air fire.

The fifth flight went around to the south of Tokyo and proceeded to the vicinity of Nogoya, where it broke up, one plane bombing Nogoya, one Osaka and one Kobe.

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## WAR DEPARTMENT

### WASHINGTON

June 5, 1942

To: The Commanding General of the Army Air Forces

Subject: Report on the Aerial Bombing of Japan

The joint Army-Navy bombing project was conceived, in its final form, in January and accomplished in April, about three months later. The object of the project was to bomb the industrial centers of Japan. It was hoped that the damage done would be both material and psychological. material damage was to be the destruction of specific targets with ensuing confusion and retardation of production. The psychological results, it was hoped, would be the recalling of combat equipment from other theaters for home defense thus effecting relief in those theaters, the development of a fear complex in Japan, improved relationships with our Allies, and a favorable reaction on the American people.

The original plan was to take off from and return to an aircraft carrier. Take off and landing tests conducted with three B-25B's at and off Norfolk, Virginia, indicated that take off from the carrier would be relatively easy but landing back on again extremely difficult. It was then decided that a carrier take-off would be made some place East of Tokyo and the flight would proceed in a generally Westerly direction from there. Fields near the East Coast of China and at Vladivostok were considered as termini. The principal advantage of Vladivostok as a terminus was that it was only about 600 miles from Tokyo against some 1200 miles to the China Coast and range was critical. Satisfactory negotiation could not, however, be consummated with the Russian Government and the idea of going to Vladivostok was therefore abandoned.

A cruising range of 2400 miles with a bomb load of 2,000 lbs. was set as the airplane requirement. A study of the various airplanes available for this project indicated that the B-25 was best suited to the

purpose. The B- could have done the job as far as range and load carrying capacity was concerned but it was felt that the carrier take-off characteristics were questionable. The B-23 could have done the job but due to the larger wing span fewer of them could be taken and clearance between the right wing tip and the carrier island would be extremely close.

Twenty-four airplanes were prepared for the mission. Preparation consisted of installing additional tankage and removing certain unnecessary equipment. Three additional gasoline tanks were installed. First a steel gasoline tank of about 265 gallon capacity was manufactured by the McQuay Company and installed by the Mid-Continent Airlines at Minneapolis. This tank was later removed and replaced by a 225 gallon leak-proof tank manufactured by the United States Rubber Company at Mishawaka, Indiana. Considerable difficulty was experienced with this rubber leak-proof tank due to leaks in the connections and due to the fact that after having made one fairly satisfactory tank the outer case was reduced in size, in order to facilitate installation, without reducing the size of the inner rubber container and consequently wrinkles developed reducing the capacity and increasing the tendency to failure and leakage. Putting air pressure on the tank increased the capacity about ten to fifteen gallons and new outer covers alleviated the trouble. It was, however, not possible for the manufacturer to provide new covers for all of the tanks before we were obliged to take off. One serious tank failure occurred the day before we were to take off. The leak was caused by a failure of the inner liner resulting from sharp wrinkles which in turn were caused by the inner liner being too large and the outer case too small. room remained, in the bomb bay, underneath this tank to permit carrying four 500 lb. demolition bombs or four 500 lb. incendiary clusters. It was necessary, in order to carry the bomb load, to utilize extension shackles which were also provided the McQuay Company. The crawl way above the bomb bay was lined and a rubber bag tank, manufactured by the U.S. rubber Company, and holding about 160 gallons was installed. The vent for this tank, when turned forward provided pressure and forced the gasoline out of the tank. When turned aft the vent sucked the air and vapor out of the tank and permitted it to be collapsed (after the gasoline was used) and pushed to one side. After this was done the ship was again completely operational as crew members could move forward or aft through the crawl way. Collapsing the tank, sucking out the vapor, and pushing it over to one side minimized the fire hazard. A very considerable amount of trouble was encountered with this tank due to leaks developing in the seams. This trouble was reduced through the use of a heavier material and more careful handling of the tank. The third tank was a 60 gallon leak-proof tank installed in the place from which the lower turret was removed. This tank was a regular 2'x2'x2' test cell with a filler neck, outlet and vent provided. The filler neck of this rear tank was readily available in flight. Ten 5-gallon cans of gasoline were carried in the rear compartment, where the radio operator ordinarily sat, and were poured into this rear tank as the gasoline level went down. These cans later had holes punched in them so that they would sink and were thrown overboard. This gave a total gallonage of 646 gallons in the main tank, 225 gallons in the bomb bay tank, 160 gallons in the crawl way tank, 60 gallons in the rear turret tank, and 50 gallons in 5-gallon tins, or 1,141 gallons, some 1,100 gallons of which were available. It might be pointed out here that all of the gasoline could not be drained from the tanks and that in filling them extreme care had to be taken in order to assure that all air was out and they were completely full. This could only be accomplished by filling, shaking down the ship and topping off again.

The extra tanks and tank supports were designed by and installed under the supervision of the Materiel Division of the Army Air Forces.

Two wooden 50 caliber guns were stuck out of the extreme tip of the tail. The effectiveness of this subterfuge was indicated by the fact that no airplane, on the flight, was attacked from directly behind. The lateral attacks were more difficult for the attacker and gave our machine gunners a better target.

De-icers and anti-icers were installed on all airplanes. Although these had the effect of slightly reducing the cruising speed they were necessary for insurance and also because it was not decided until shortly before leaving on the mission whether Vladivostok or East China was to be the terminus. Should East China be the terminus no ice was to be expected at lower altitudes but icing conditions did still prevail along the Northern route to Vladivostok.

When the turret guns were fired aft with the muzzle close to the fuselage it was observed that the blast popped rivets and tore the skin loose. As a result of this it was necessary to install steel blast plates.

Inasmuch as it was decided that all bombing would be done from low altitudes and the Norden bomb sight did not particularly lend itself to extremely altitude bombing, the bomb sight was removed and a simplified sight designed by Captain C.R. Greening was installed in its place. Actual low altitude bombing tests carried out at 1500 feet showed a greater degree of accuracy with this simplified sight than we were able to obtain with the Norden. This not only permitted greater bombing accuracy but obviated the possibility of the Norden sight falling into enemy hands. Captain Greening deserves special commendation for the design of this sight.

Difficulty was experienced in getting the lower turret to function properly. Trouble was encountered with the turret activating mechanism and with the retracting and extending mechanism. These troubles were finally overcome in large part. It was then found that the attitude of the gunner and the operation of the sight were so difficult that it would not be possible in the time available to train gunners to efficiently operate the turret. As a consequence of this, and also in order to save weight and permit the installation of the additional gas tanks, the lower turret was removed and a plate put over the whole where it stuck through the bottom of the fuselage.

We feel very strongly that in the present race to provide airplanes and crews in the greatest possible number in the shortest length of time that only equipment that is natural to use is satisfactory. Time does not permit the training of personnel to operate unnatural equipment or equipment that requires a high degree of skill in its operation. This thought should be kept in mind in the design, construction and operation of our new fire control apparatus.

Due to a shortage of 50 caliber ammunition the machine guns had not been fired and when we started training we immediately found that they did not operate properly. Some did not fire at all and the best of them would only fire short bursts before jamming. Mr. W.C. Olson from Wright Field was largely responsible for overcoming this difficulty. He supervised the replacement of faulty parts, the smoothing down of others, the proper adjustment of clearances and the training of gun maintenance crews. When we left on our mission all guns were operating satisfactorily.

Pyrotechnics were removed from the airplane in order to reduce the fire hazard and also for the slight saving in weight. Two conventional landing flares were installed immediately forward of the rear armored bulkhead. This gave a maximum of protection against enemy fire. There was no dropping mechanism for the landing flares. It was planned, if it became necessary to use them, that they be thrown out by the rear gunner. A lanyard attached to the parachute flare and the fuselage would ordinarily remove the case some 6 feet from the plane. It is suggested that pyrotechnics be installed against the armored bulkhead instead of along the sides of the fuselage.

Inasmuch as it was planned, in the interest of security, to maintain radio silence throughout the flight and weight was of the essence, the 230 lb. Liaison radio set was removed.

The lead ship and each of the flight leaders' ships were equipped with electrically operated automatic cameras which took 60 pictures and one-half second intervals. The cameras could be turned on at any time by the pilot and were automatically started when the first bomb dropped. Cameras were located in the extreme tip of the tail between the two wooden 50 caliber guns. Lens angle was 35°. As they were pointed down 157° the rearward field, in level attitude, covered 2<sup>1</sup>/<sub>2</sub>° above the horizon and 32<sup>1</sup>/<sub>2</sub>° below. In tests they operated perfectly. The other ten airplanes carried 16 m.m. movie cameras similarly mounted.

All special equipment such as emergency rations, canteens, hatchets, knives, pistols, etc. were made secure before take-off.

Special 500 lb. demolition bombs were provided, through the cooperation of Colonel Max F. Schneider of A-4, by the Ordnance Department. These bombs were loaded with an explosive mixture containing 50% T.N.T. and 50% Amatol. They were all armed with a 1/10 of a second nose fuse and a 1/40 of a second specially prepared tail fuse. The 1/10 of a second nose fuse was provided in case the tail fuse failed. 11 second delay tail fuses were available to replace the 1/40 of a second tail fuse in case weather conditions made extremely low bombing necessary. In this case the tail fuse was to be changed just before take-off and the nose fuse in that case would not be armed.

The Chemical Warfare Service provided special 500 incendiary clusters each containing 128 incendiary bombs. These clusters were developed at the Edgewood Arsenal and test dropped by the Air Corps test group at Aberdeen. Several tests were carried on to assure their proper functioning and to determine the dropping angle and dispersion. Experimental work on and production of these clusters was carried on most efficiently.

A special load of 50 caliber ammunition was employed. This load carried groups of 1 tracer, 2 armor piercing and 3 explosive bullets.

The twenty-four airplanes for the Tokyo project were obtained from the 17th Bombardment Group. Inasmuch as the airplanes had been obtained from this group and there were, therefore, crews available without airplanes, together with the fact that these crews were experienced in the use of these particular airplanes, the crews were also obtained from this source. It was explained to the Commanding Officer of the 17th Bombardment Group, Lt. Colonel W.C. Millis, that this was to be a mission that would be extremely hazardous, would require a high degree of skill and would be of great value to our defense effort. Volunteers for this mission were requested. More people than we could possibly use immediately volunteered. Twenty-four crews were ordered to Eglin Field for a final course of training. These crews together with the ground maintenance men, armorers, etc., proceeded to Eglin Field, Valparaiso, Florida, as rapidly as the airplanes could be converted and made available. The first of them arrived just before the first of March and the rest just after.

Concentrated courses of instruction were given at Eglin Field. The instruction included carrier take-off practice under the supervision of Lt. Henry Miller of the U.S. Navy. This practice was carried out on one of the auxiliary fields near Eglin. White lines were drawn on two of the runways of this field. Take-off practice was carried out with light load, normal load, and overload up to 31,000 lbs. In all cases the shortest possible take-off was obtained with flaps full down, stabilizer set three-fourths, tail heavy, full power against the brakes and releasing the brakes simultaneously as the engine came up to revs. The control column was pulled back gradually and the airplane left the ground with the tail skid about one foot from the runway. This appeared to be an unnatural attitude and the airplane took off almost in a stall. In spite of the high wing loading and unnatural attitude the comparatively low power loading and good low-speed control characteristics of the airplane made it possible to handle the airplane without undue difficulty in this attitude. Only one pilot had difficulty during the take-off training. Taking off into



a moderately gusty wind with full load, her permitted the airplane to side slip back into the ground just after take-off. No one was hurt but the airplane was badly damaged. While we do not recommend carrier take-off procedure for normal take-offs, it does permit of a much shorter take-off, and may be employed in taking off from extremely short or soft fields. With about a ten-miles wind take-offs with light load were effected with as short a run as 300 feet. With a normal load of 29,000 lbs. In 600 feet, and with 31,000 lbs. In less than 800 feet. The tact, skill and devotion to duty of Lt. Miller, of the U.S. Navy, who instructed our people in carrier take-off procedure deserves special commendation.

Special training was given in cross country flying, night flying and navigation. Flights were made over the Gulf of Mexico in order to permit pilots and navigators to become accustomed to flying without visual or radio references or land marks.

Low altitude approaches to bombing targets, rapid bombing and evasive action were practiced. Bombing of land and sea targets was practiced at 1500, 5000 and 10,000 feet. Low altitude bombing practice was specialized in. One hundred pound sand loaded bombs were used in the main but each crew was given an opportunity to live bombs as well.

Machine gun practice was carried on on the ground and in the air. Ground targets were attacked and it was intended to practice on tow targets as well but time did not permit. In order to get practice in operating the turret, pursuit planes simulated attack on our bombers and the gunners followed them with their empty guns.

The first pilots were all excellent. The co-pilots were all good for co-pilots. The bombardiers were fair but needed brushing up. The navigators had had good training but very little practical experience. The gunners, almost without exception, had never fired a machine gun from an airplane at either a moving or stationary tt.

In spite of a large amount of fog and bad weather which made flying impossible for days at a time and the considerable amount of time required to complete installations and make the airplanes operational at Eglin Field the training proceeded rapidly under the direction of Captain Edward York. In three weeks ships and crews were safely operational although additional training of the crews and work on the ships would have improved their efficiency.

On March 25, the first of 22 ships (one airplane, as previously mentioned was wrecked during take-off practice and another airplane was damaged due to the failure of the front wheel shimmy damper. While taxiing normally the front wheel shimmed so violently that a strut fitting carried away and let the airplane down on its nose. Although the damage was slight there was not time to repair it) took off from Eglin Field for Sacramento Air Depot where the airplanes were to have a final check and the remaining installations were to be made. On March 27, all airplanes had arrived.

On March 31 and April 1, 16 planes were loaded on the U.S.S. *Hornet* alongside of the dock at the Alameda Air Depot. Although 22 planes were available for loading there was room on deck for only 15. 16 planes were actually loaded but it was intended that the 16th plane would take off the first day out in order that the other pilots might have an opportunity to at least see a carrier take-off. A request had previously been made of Admiral W.F. Halsey, who was in charge of the task force, to permit each one of the pilots a carrier take-off prior to leaving on the mission or to permit at least one pilot to take off in order that he might pass the information obtained on to the others. Admiral Halsey did not agree to this due to the delay it would entail. He did, however, agree to take one extra plane along and let it take off the first day out or the first favorable weather thereafter. It was later agreed to keep this plane aboard and increase our component from 15 to 16.

Training was continued on the carrier. This training consisted of a series of lectures on Japan given by Lt. Stephen Jurika, Jr. of the Navy, lectures on first aid and sanitation by Lt. T.R. White, M.C. our flight surgeon, lectures on gunnery, navigation and meteorology by members of our own party and officers from the *Hornet*, and a series of lectures on procedure by the writer.

Actual gunnery and turret practice was carried on using kites flown from the *Hornet* for targets.

Celestial navigation practice for our navigators supervised by the *Hornet* navigation officer. Star sights were taken from the deck and from the navigating compartment in the airplanes. In this way a high degree of proficiency was developed and satisfactory optical characteristics of the navigating compartment window were assured.

A great deal of thought was given to the best method of attack. It was felt that a take-off about 3 hours before daylight arriving over Tokyo at the crack of dawn would give the greatest security, provide ideal bombing conditions, assure the element of surprise and permit arrival at destination before dark. This plan was abandoned because of the anticipated difficulty of a night take-off from the carrier and also because the Navy was unwilling to light up the carrier deck for take-off and provide a check light ahead in these dangerous waters.

Another plan was to take off at crack of dawn, bomb in the early morning and proceed to destination arriving before dark. This plan had the disadvantage of daylight bombing presumably after the Japanese were aware of our coming and the hazards incident to such a daylight attack. The third plan, the plan finally decided on, was to take off just before dark, bomb at night and proceed to destination arriving after daylight in the early morning. In order to make this plan practical one plane was to take off ahead of the others, arrive over Tokyo at dusk and fire the most inflammable part of the city with incendiary bombs. This minimized the overall hazard and assured that the target would be lighted up for following airplanes.

Despite an agreement with the Navy that we would take off the moment contact was made with the enemy and the considerable hazard of contact being made during the run in on the last day we still decided to gamble in order to get the greater security of a night attack. As a matter of fact, contact was made in the early morning and we took off several hours after daylight.

The first enemy patrol vessel was detected and avoided at 3:10 a.m. on the morning of April 18. The Navy task force was endeavoring to avoid a second one some time after daylight when they were picked up by a third. Although this patrol was sunk it understood that it got at least one radio message off to shore and it was consequently necessary for us to take off immediately. The take-off was made at Latitude 35° 43'N Longitude 153° 25'E approximately 824 statute miles East of the center of Tokyo. The Navy task force immediately retreated and in the afternoon was obliged to sink two more Japanese surface craft. It is of interest to note that even at this distance from Japan the ocean was apparently studded with Japanese craft.

Final instructions were to avoid non-military targets, particularly the Temple of Heaven, and even though we were put off so far at sea that it would be impossible to reach the China Coast, not to go to Siberia but to proceed as far West as possible, land on the water, launch the rubber boat and sail in.

Upon take-off each airplane circled to the right and flew over the *Hornet* lining the axis of the ship up with the drift sight. The course of the *Hornet* was displayed in large figures from the gun turret abaft the island. This, through the use of the airplane compass and directional gyro permitted the establishment of one accurate navigational course and enabled us to swing off on to the proper

course for Tokyo. This was considered necessary and desirable due to the possibility of change in compass calibration, particularly on those ships that were located close to the island.

All pilots were given selected objectives, consisting of steel works, oil refineries, oil tank farms, ammunition dumps, dock yards, munitions plants, airplane factories, etc. They were also given secondary targets in case it was impossible to reach the primary target. In almost every case primary targets were bombed. The damage done far exceeded our most optimistic expectations. The high degree of damage resulted from the highly inflammable nature of Japanese construction, the low altitude from which the bombing was carried out, and the perfectly clear weather over Tokyo, and the careful and continuous study of charts and target areas.

In addition to each airplane having selected targets assigned to it, each flight was assigned a specific course and coverage. The first flight of 3 airplanes, led by Lt. Hoover, covered the Northern part of Tokyo. The second flight, led by Captain Jones, covered the central part of Tokyo. The third flight, led by Captain York covered the Southern part of Tokyo and the North Central part of the Tokyo bay area. The fourth flight, led by Captain Greening, covered the Southern part of Kenegawa, the city of Yokohama and the Yokasuka Navy Yard. The flight was spread over a 50 miles front in order to provide the greatest possible coverage, to create the impression that there was a larger number of airplanes than were actually used, and to dilute enemy ground and air fire. It also prohibited the possibility of more than one plane passing any given spot on the ground and assured the element of surprise.

The fifth flight went around to the South of Tokyo and proceeded to the vicinity of Nogoya where it broke up, one plane bombing Nogoya, one Osaka and one Kobe.

The best information available from Army and Navy intelligence sources indicates that there were some 500 combat planes in Japan and that most of them were concentrated in the Tokyo Bay area. The comparatively few fighters encountered indicated that home defense had been reduced in the interest of making the maximum of planes available in active theaters. The pilots of such planes as remained appeared inexperienced. In some cases they actually did not attack, and in many cases failed to drive the attack home to the maximum extent possible. In no case was there any indication that a Japanese pilot might run into one of our planes even though the economics of such a course would appear sound. It would entail trading a \$40,000 fighter for a \$200,000 bomber and one man, who could probably arrange to collide in such a way as to save himself, against 5 who even though they escaped would be interned and thus lose their military utility. The fire of the pilots that actually attacked was very inaccurate. In some cases the machine gun gullets bounced off the wings without penetrating them. This same effect was observed when a train, upon which some of our crew members were riding in China, was machine gunned by a Japanese attack plane. One of the projectiles which had bounced off the top of the train without penetrating was recovered. It was a steel pellet about one inch long, pointed on one end and boat tailed on the other. It had no rifling marks and was apparently fired from a smooth bore gun.

The anti-aircraft defense was active but inaccurate. All anti-aircraft bursts were black and apparently small guns of about 37 or 40 m.m. size. It is presumed that the high speed and low altitude at which we were flying made it impossible for them to train their larger caliber guns on us if such existed. Several of the airplanes were struck by anti-aircraft fragments but none of them was damaged to an extent that impaired their utility or impeded their progress. Although it was to be presumed that machine gun fire from the ground was active, none of the crew members interviewed to date saw any such action nor was there evidence of machine gun fires in the bottom of any of the airplanes. A few barrage balloons were seen. One cluster of five or six was observed just north of the Northernmost part of Tokyo Bay and what appeared to be another cluster was observed near the Bay to the

Southeast. These barrage balloons were flying at about 3000 feet and were not in sufficient numbers to impede our bombing. Japanese anti-aircraft fire was so inaccurate that when shooting at one of our airplanes in the vicinity of the barrage balloons they actually shot down some of their own balloons.

We anticipated that some difficulty might be experienced due to our targets being camouflaged. Little or no effective camouflage was observed in the Tokyo area.

We can only infer that as the result of an unwarranted feeling of security and an over-all shortage of aircraft and pilots, home defense had been made secondary to efficient operation in other theaters. It is felt that the indicated low morale of the Japanese pilots around Tokyo compared to the efficiency and aggressiveness of pilots encountered on the active front was the result of a knowledge on their part of the inadequacy of their equipment and their own personal inefficiency.

In spite of the fact that at least one radio message was gotten off prior to our take-off by the Japanese patrol boat that was later sunk -- that we passed a Japanese light cruiser (thought by one of the pilots to be a tanker) about miles East of Tokyo -- a Japanese patrol plane or bomber headed directly for our task force about 600 miles from Tokyo (this plane turned around and followed one of our airplanes so we know we were observed by it) and innumerable Japanese patrol and fishing boats from some 300 miles off-shore until crossing the Japanese Coast, the Japanese were apparently entirely unprepared for our arrival. Inasmuch as messages must have been received at some message center, we can only presume poor dissemination of information or the complete failure of their communication system.

As previously mentioned, the take-off occurred almost ten hours early due to contact being made with enemy surface craft. In addition to this, the take-off was made on the 18th instead of the 19th as originally planned and agreed due to the Navy getting one day ahead of schedule and the undesirability of remaining longer than necessary in dangerous waters.

We had requested a fast run-in at night and slow day progress in order that we might be within safe distance of Tokyo at any time during the take-off day. This was not expedient from a Navy viewpoint due to their poor maneuverability at slow speeds and the undesirability of running in any closer than was absolutely necessary.

We appreciated the desirability of advising Chungking of our premature take-off but due to the necessity of strict radio silence, this could not be done prior to our actual take-off. We requested that Chungking be advised immediately after we took off and felt that even though they were not advised by the Navy radio that the Japanese radio would give them the desired information. As a matter of actual fact, Chungking did know that we were coming but official information was not sent to Chuchow, presumably due to the extremely bad weather and the communication difficulties resulting therefrom. As a result of this no radio homing facilities were provided for us at Chuchow, nor were light beacons or landing flares provided. To the contrary, when our planes were heard overhead an air raid warning alarm was sounded and lights were turned off. This, together with the very unfavorable flight weather over the China Coast, made safe landing at destination impossible. As a result all planes either landed either near the Coast or the crews bailed out with their parachutes.

The individual airplanes took off as follows:

Airplane No. AC 40-2344 -- Took off at 8:20 a.m. ship time			
Pilot	Lt. Col.	J.H. Doolittle	0-271855
Co-Pilot	Lt.	R.E. Cole	0-421602

Navigator	Lt.	H.A. Potter	0-419614
Bombardier	S/Sgt.	F.A. Braemer	6875923
Engineer-Gunner	S/Sgt.	P.J. Leonard	6248728

Proceeded to Tokyo and bombed the North Central industrial area with 4 incendiary clusters. Proceeded on to the China Coast where very unfavorable weather made it necessary for crew to abandon ship. Put plane on AS.F.C.E. and turned off gasoline valves. Pilot jumped last at 0:20 p.m. ship time, from 8,000 feet and landed near Tien Mu Shen, about 70 miles north of Chuchow. After landing contacted General Ho, Director of the Western Branch of Chekiang Province who agreed to take the necessary steps to collect missing crew members, locate the ship and establish a look-out for other planes in China, on the stretch of beach between Hung Chow Bay and Wen Chow Bay and by the sampans and junks that might be putting out to sea. All crew members o.k. Detailed report attached hereto.

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Airplane No. AC 40-2292 -- Took off at 8:25 a.m. ship time

Pilot	Lt.	T. Hoover	0-393133
Co-pilot	Lt.	Wm. N. Fitzhugh	0-421067
Navigator	Lt.	Carl N. Wildner	0-352857
Bombardier	Lt.	Richard E. Miller	0-432337
Engineer-Gunner	S/Sgt.	Douglas V. Radney	6266909

This is the only airplane that experienced any difficulty in taking off. The sea was so rough that water was being taken on over the bow of the carrier, and the take-off was made on the upbeat. The airplane was thrown into the air and the pilot pulled back on the stick too abruptly. For a moment it looked as though the plane might fall off on a wing but through good piloting Lt. Hoover was able to correct the condition and proceed without further difficulty. This together with the Navy crew member who was struck in the arm by a propeller while assisting in maneuvering an airplane on the deck, was the only eventuality during take-off. Both were due to the rough sea. (After this take-off Lt. Miller recommended a more normal take off to the other pilots.) Proceeded to Tokyo and bombed powder factories and magazines near the river north of the main railroad station and Imperial Palace with 3 demolition bombs and one incendiary cluster. This bombing was done from 900 feet, and the debris flew to a height higher than that of the airplane. Proceeded to a point on the China coast near Ninypo.

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Airplane No. AC 40-2270 -- Took off at 8:30 a.m. ship time

Pilot	Lt.	Robert M. Gray	0-403862
Co-pilot	Lt.	Jacob E. Manch	0-389941
Navigator	Lt.	Chas. J. Ozuk	0-419618
Bombardier	Sgt.	A.E. Jones	6580258
Engineer-Gunner	Cpl.	Leland D. Faktor	17003211

Proceeded to Tokyo. Bombed steel works, Gas Company and chemical works with demolition bombs and a factory district with incendiary bombs. Proceeded to China bailing out at 6200 feet in the mountains near and Southeast of Chuchow. Lt. Gray, Lt. Mach and Sgt. Jones were uninjured. Lt. Ozuk suffered a severe cut

on his leg due to landing on a sharp rock. Corporal L.D. Faktor was found dead. The case of Corp. Faktor's death was unknown as his parachute apparently functioned properly. It is suspected that he landed on extremely rough terrain and was killed in the secondary fall. A detailed report prepared by Lt. Gray is [attached](#) hereto.

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Airplane No. AC 40-2282 -- Took off at 8:33 a.m. ship time

Pilot	Lt.	Everett W. Holstrom	0-397395
Co-pilot	Lt.	Lucian N. Youngblood	0-421153
Navigator-Gunner	Lt.	Harry C. McCool	0-419329
Bombardier	Sgt.	Robert J. Stephens	6936650
Engineer-Gunner	Cpl.	Bert M. Jordan	6952993

Proceeded in the direction of Tokyo but encountered severe fighter opposition. Endeavored to get around the fighters and passed beyond Tokyo. They then decided to bomb a secondary target but were again attacked and driven off. Eventually dropped their bombs in the water and proceeded to a point near and Southeast of Shangjac where all crew members bailed out safely.

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Airplane No. AC 40-2283 -- Took off at 8:37 a.m. ship time

Pilot	Capt.	David M. Jones	0-22482
Co-pilot	Lt.	Rodney R. Wilder	0-421149
Navigator-Gunner	Lt.	Eugene F. McGurl	0-431648
Bombardier	Lt.	Denver N. Truelove	0-427637
Engineer-Gunner	Sgt.	Joseph W. Manske	6914440

Proceeded to Tokyo where bombing from 1200 feet, they made direct hits with three demolition bombs and one incendiary cluster on power stations, oil tanks, a large manufacturing plant and the congested area Southeast of the Imperial Palace. one factory bombed was a new building which covered approximately two city blocks. They then proceeded to China, bailing out near and just Southeast of Chuchow. All crew members are safe.

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Airplane No. AC 40-2298 -- Took off at 8:40 a.m. ship time

Pilot	Lt.	Dean E. Hallmark	0-421081
Co-pilot	Lt.	Robert J. Meder	0-421280
Navigator-Gunner	Lt.	Chase J. Neilson	0-419938
Bombardier	Sgt.	Wm. J. Dieter	6565763
Engineer-Gunner	Cpl.	Donald E. Fitzmaurice	17360

This airplane landed in the Nangchang Area near Poyang Lake. From the best reports available (which are not to be relied upon) two crew members, presumably Sgt. Dieter and Cpl. Fitzmaurice are missing and three crew members, presumably Lts. Hallmark, Meder and Neilson were captured by the Japanese. It was reported that one of these was bayoneted resisting capture but was not killed.

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Airplane No. AC 40-2261 -- Took off at 8:43 a.m. ship time

Pilot	Lt.	Ted W. Lawson	0-399549
Co-pilot	Lt.	Dean Davenport	0-427310
Navigator-Gunner	Lt.	Chas. L. McClure	0-431647
Bombardier	Lt.	Robt. S. Clever	0-432336
Engineer-Gunner	Sgt.	David J. Thatcher	19019573

Bombed the industrial section of Tokyo with 3 demolition bombs and one incendiary bomb. This airplane landed in the water off the coast of China, west of Shangchow. One crew member was badly injured, three injured, one slightly injured. The badly injured crew member is thought to be Lt. Lawson but we do not have definite confirmation of this. It is understood that he had a head and leg injury and it was necessary to give him several transfusions. Sgt. Thatcher was only slightly injured and it was due to his heroism that the lives of the other crew members were saved. Although badly cut on the head and knocked unconscious when the plane hit the sea and turned over he nevertheless waded and swam out into the perilous sea to secure the medical kit from the crushed plane. He was the only crew member physically able to carry on. After it became obvious that any further wait would result in capture by Japanese forces only 3 miles away, Chinese fishermen were persuaded by him to carry his injured crewmates to temporary safety around Japanese outposts. Then for three days Chinese fishermen were forced or persuaded by him to carry the injured crew members over difficult mountainous terrain until medical aid was reached. All of this plane's crew were saved from either capture or death as a result of Sgt. Thatcher's initiative and courage in assuming responsibility and tending the wounded day and night. As of the last report the 4 injured crew members, less Sgt. Thatcher who had proceeded on, had left the dangerous area with a Chinese escort and with Lt. T.R. White, of the Medical Corps from Airplane No. 40-2267 in attendance.

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Airplane No. AC 40-2242 -- Took off at 8:46 a.m. ship time

Pilot	Capt.	Edward J. York	0-21151
Co-pilot	Lt.	Robert G. Emmens	0-24104
Navigator Bombardier	Lt.	Nolan A. Herndon	0-419328
Engineer-Gunner	S/Sgt.	T.H. Laban	6559855
Gunner	Sgt.	David W. Pohl	6152141

This airplane bombed Tokyo with 3 demolition bombs and one incendiary bomb. Due to extremely high gasoline consumption they proceeded to Siberia landing at a point about 40 miles north of Vladivostok. All crew members o.k. and plane apparently saved. All were interned by the Russian Government and are now at Penza about 350 miles Southeast of Moscow.

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Airplane No. AC 40-2303 -- Took off at 8:50 a.m. ship time

Pilot	Lt.	Harold Watson	0-397797
Co-pilot	Lt.	James M. Parker, Jr.	0-421128
Navigator-Gunner	Lt.	Thos. C. Griffin	0-377848
Bombardier	Sgt.	Wayne M. Bissell	6579237
Engineer-Gunner	T/Sgt.	Eldred V. Scott	6530453

Bombed Tokyo with 3 demolition bombs and one incendiary cluster, scored hit at Kawasji truck and tank plant, another factory building and the congested industrial districts near the railroad station south of the Imperial Palace. The crew bailed out about 100 miles south of Poyang lake. All landed safely except Lt. Watson whose arm was caught in a parachute riser and dislocated at the shoulder. he suffered severe discomfort for a week until a doctor was encountered who put the arm back in place. When last seen about May 1 the arm was healing rapidly and Lt. Watson was experiencing no discomfort.

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Airplane No. AC 40-2250 -- Took off at 8:53 a.m. ship time

Pilot	Lt.	Richard O. Joyce	0-401770
Co-pilot	Lt.	J. Royden Stork	0-421345
Navigator-Bombardier	Lt.	H.E. Crouch	0-395839
Engineer-Gunner	Sgt.	Geo. E. Larkin Jr.	6984298
Gunner	S/Sgt.	Ed. W. Horton Jr.	6139178

Proceeded to Tokyo and bombed the Japanese Special Steel Company plants and warehouses in South Tokyo in the Shiba Ward 1<sup>1</sup>.2 miles north of Tana River with 3 demolition bombs and 1 incendiary cluster from 2500 feet. proceeded to China and all crew members bailed out about 30 miles north of Chuchow. All o.k. (Jumped from 8000 feet) Detailed report prepared by Lt. Joyce [attached](#) hereto.

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Airplane No. AC 40-2249 -- Took off at 8:56 a.m. ship time

Pilot	Capt.	Chas. R. Greening	0-22443
Co-pilot	Lt.	Kenneth E. Reddy	0-421131
Navigator-Gunner	Lt.	Frank A. Kappeler	0-419579
Bombardier	S/Sgt.	Wm. L. Birch	6561172
Engineer-Gunner	Sgt.	Melvin J. Gardner	6296448

Proceeded to Yokohama and bombed oil refineries, docks, warehouses and industrial area of Yokohama with 4 incendiary clusters from 600 feet. After bombing proceeded to China abandoning ship at 10,000 feet at a point about 40 miles northwest of Chuchow. All crew members o.k. Detailed report attached hereto.

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Airplane No. AC 40-2278 -- Took off at 8:59 a.m. ship time

Pilot	Lt.	Wm. M. Bower	0-398557
Co-pilot	Lt.	Thadd Blanton	0-421030
Navigator-Gunner	Lt.	Wm. R. Pound	0-419333
Bombardier	T/Sgt.	Waldo J. Bither	6101457
Engineer-Gunner	S/Sgt.	Omer A. Duquette	6143447

Proceeded to Yokohama and bombed oil refineries, tank farms and warehouses with 3 demolition bombs and 1 incendiary cluster from 1100 feet. proceeded to China and all hands abandoned ship at a pint about 40 miles northwest of Chuchow. All o.k. Detailed report [attached](#) hereto.

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Airplane No. AC 40-2247 -- Took off at 9:01 a.m. ship time

Pilot	Lt.	Edgar E. McElroy	0-421122
Co-pilot	Lt.	Richard A. Knobloch	0-421816
Navigator-Gunner	Lt.	Clayton J. Campbell	0-419327
Bombardier	Sgt.	Robert C. Rourgeois	7000417
Engineer-Gunner	Sgt.	Adam R. Williams	6969211

Proceeded to the Yokosuka Navy Yard and bombed the dock area and one partially completed boat from 1500 feet with 3 demolition and one incendiary cluster. Bombs apparently had maximum effect, destroying everything on the dock and enveloping the boat in flames. Proceeded to China and landed near Poyang. Bailed out at 6,000 feet. All o.k. Detailed report [attached](#) hereto.

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Airplane No. AC 40-2297 -- Took off at 9:07 a.m. ship time

Pilot	Major	John A. Hilger	0-20437
Co-pilot	Lt.	Jack A. Sims	0-421340
Navigator-Bombardier	Lt.	James H. Macia, Jr.	0-419330
Engineer-Gunner	S/Sgt.	Jacob Eierman	6883947
Radio-Gunner	S/Sgt.	Edwin V. Bain	6561290

Proceeded to Negoya and bombed military barracks at Negoya Castle, oil storage warehouses northwest of the business district, military arsenal in the center of city and the Mitsubishi aircraft factory on the water front with 4 incendiary clusters from 1500 feet. proceeded to China and all crew members bailed out, landing southeast of and near Shangjoa. All members o.k. Detailed report [attached](#) hereto.

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Airplane No. AC 40-2267 -- Took off at 9:15 a.m. ship time

Pilot	Lt.	Donald G. Smith	0-389010
Co-pilot	Lt.	Griffith P. Williams	0-421356
Navigator-Bombardier	Lt.	Howard A. Sessler	0-431650
Flight Surgeon	Lt.	Thomas R. White, M.C.	0-420191
Engineer-Gunner	Sgt.	Edward J. Saylor	6569707

Proceeded to Kobe and bombed the main industrial area, age aircraft factory, dock yards and yards in the north part of the Bay with 4 incendiary clusters, proceeded to China and landed in the water west of Sangchow. All crew members o.k. Lt. T.R. White, Medical Corps, a member of the crew, at great risk to his life and with exemplary courage remained inside the sinking ship with water rising dangerously until his surgical instruments and medical kit could be salvaged. The plane plunged down into 100 t of water just after he had completed his effort and escaped. This action, together with his unselfish devotion to duty and attendance on the injured crew of airplane #AC 40-2261 in spite of a Japanese advance into that area, indicated exemplary courage and deserves special commendation.

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Airplane No. AC 40-2268 -- Took off at 9:19 a.m. ship time

Pilot	Lt.	Wm. G. Farrow	0-421731
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Co-pilot	Lt.	Robert L. Hite	0-417960
Navigator-Gunner	Lt.	Geo. Barr	0-431644
Bombardier	Cpl.	Jabob DeShazer	6584514
Engineer-Gunner	Cpl.	C. Spatz	6936659

Landed on the Coast at Shipu south of Ningpo and crew was captured by soldiers of the puppet government. The best information available indicates that two crewman are missing and three captured. Inasmuch as the two captured crews were in airplanes No. AC 40-2268 and 2298, it is possible that some confusion exists in the identification of these two airplanes and their location.

Before leaving China, arrangements were made with General Koo Chow Tung and Madam Chiang Kai-shek to endeavor to ransom the prisoners who had fallen into the hands of the puppet government. Some consideration was given to attempting the rescue of the prisoners that had fallen into Japanese hands in the vicinity of Payang Lake but it was indicated, due to the strong Japanese position, that at least two regiments would be required and that the chance of the prisoners being killed during the action was so great that the idea was abandoned. Negotiations were being carried on, when the write left China, to then end of offering small guerrilla bands a certain amount of money for each prisoner that they could bring out of Japanese occupied territory alive.

Several outstanding lessons may be learned from the flight. First, sufficient modern airplanes and competent pilots should be retained within the territorial limits of the United States to assure her adequate defense. Second, an absolutely infallible detection and communication system must be provided. Third, efficient utilization of small surface craft, such as fishing boats equipped with an extremely simple radio could, through the use of a simplified code, send messages to a message center indicating the type, position, direction of approach, speed and altitude of any enemy attacking force. Fourth, the necessity for suitable camouflage and adequate dissimulation. Fifth, the highest possible degree of dispersal in order that a bomb attack, if successful, will do the minimum amount of damage.

The desirability of stopping an enemy bombing raid before arrival over target is obvious. This can be accomplished only with a preponderance of fighters.

The successful bombing of Tokyo indicated that, provided the element of surprise is possible, an extremely successful raid can be carried out at low altitudes with great damage and high security to equipment and personnel.

/signed/  
J.H. DOOLITTLE  
Brigadier General, U.S. Army

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**WAR DEPARTMENT**

**WASHINGTON**

June 8, 1942

Subject: Addition to Report.  
To: The Commanding General of the Army Air Forces

1. It should have been mentioned, in connection with Lieutenant E.W. Holstrom in airplane AC 40-2282 (P 23), Captain E.J. York in airplane AC 40-2242 (5) and Lieutenant H.F. Watson in airplane AC 40-2303, that their turrets failed just before take-off, were inoperative, and they were therefore unable to protect themselves against enemy pursuit.
2. "Room remained" in the fourteenth line on page 3 should start a new paragraph, and "The crawl" in line 17 of the same page should start a new paragraph. "The third" in line 6 on page 4 should start a paragraph.
3. The paragraph starting "When the turret" on page 5 should be moved to page 7 and inserted just before the paragraph "Pyrotechnics were removed."

/signed/  
J.H. DOOLITTLE  
Brigadier General, U.S. Army

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Chungking,  
China  
May 2, 1942

SUBJECT: Mission report on Project April 18, 1942

TO: Brigadier General J.H. Doolittle.

Type Ship: B-25-B (North American) #40-2270

Crew: Pilot -- 1st Lt. Robert M. Gray  
Co-pilot -- 2nd Lt. Jack E. Manch  
Nav. -- 2nd Lt. Charles V. Ozak  
Bomb. - Sgt. Aden E. Jones  
Eng. Gun. -- Cpl. L.D. Factor

Orders: This mission was voluntary called from Lexington Field, Columbia, S.C. and then to Eglin Field, Florida, to start working and training. From Florida the group went to McClellan Field, Cal. for more supplies and maintenance. We continued to Alameda Naval Base and loaded the planes aboard the U.S.S. *Hornet*.

All navigation equipment was issued enroute.

Order were given for all army pilots to man their planes for take off. We were to report to Chuchow, China, as soon as possible if could not land our planes.

Time of Takeoff: 8:30 U.S.S. *Hornet* time.  
Altitude desired: Bombing Alt.: 1500 ft.  
Approach: Under 1500 ft.  
Actual Alt: Bombing:1450  
Approach: surface to 50 ft and 6500 over China.  
Weather: Broken to clear to Tokyo

Clear and unlimited over Tokyo  
Enroute to China: Broken to overcast  
Over China: Overcast with rain.

Bombs: 3 - 500 . dem. -- 1 - 500 incendiary

Ammunition: 850 rounds 50  
                  rounds 30

All ammunition loaded 2 tracers, 3 incendiary and 1 armor piercing.

Target: Steel mill, chemical factory, gas co, and thickly populated small factories district. Contacted A.A. but did not have range. Had right altitude -- also ground fire.

Pursuit None.

Opposition:

#### Mission Report:

Bombed Steel works but did not see the bombs hit. Felt the concussion. Second bomb made direct on gas company. Third bomb was a direct hit on the chemical works and setting fire to the whole works. Fourth scattered incendiary over the correct area but did not stay to see if it started fires. machine gunned barrax and men on the way out.

#### Arrival in China:

Giving orders thirty (30) minutes before time to bail out all personnel were in chutes. Gave an order fifteen (15) minutes before time again to make sure. When all personnel was gone, I switched on AFCE and jumped (6200 ft). I landed on summit of a mountain and remained there the remainder of the night. The next morning I looked for other personnel but could not find them. Walked all day and came to village where I stayed that night. Was directed in wrong direction for six miles and ended up where I started from that morning. Sgt. Aden Jones joined me there that night and we rode in chairs the next day to river side. Stayed there all night and until 16:30 o'clock the next day waiting on Lt. Jack Manch. On Lt. Manch arrival we loaded a small boat and traveled until night. Travelled by boat all the next day and part of the night arriving in Chuchow. Stayed two days in Chuchow. Went by train and bus to Hangyen which took four days. Took plane from Hangyen to Chungking.

/signed/  
ROBERT M. GRAY  
1st Lt., A.C.

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Chungking, China  
May 5, 1942

SUBJECT: Mission report of Doolittle project on April 18, 1942.

TO: Brigadier General James H. Doolittle.

Airplane Type: B-25-B #40-2250

Crew:

Pilot -- 1st Lt. Richard O. Joyce -- 0-401770  
Co-pilot -- 2nd Lt. J. Royden Stork-- 0-421345  
Navigator-Bombardier -- 1st Lt. Horace E. Crouch -- 0-395839  
Engineer-Gunner -- Sgt. George E. Larkin  
Gunner Staff Sgt. Edwin W. Horton

Orders:

To proceed from Lexington County Air Base at Columbia, South Carolina to Eglin Field, Florida where the mission was revealed, special preparations made, training of crew accomplished and alterations and repair of plane done. Final preparations were made at McClellan Field, Sacramento, California, two weeks prior to loading the airplane and the crew boarding the U.S. Naval Aircraft Carrier, U.S.S. *Hornet* at Alameda, California. We sailed from San Francisco and targets were assigned at sea and maps, charts and target location and all procedures were studied constantly while at sea.

The Take-off was ordered at 7:30 A.M., April 18, 1942. An emergency since we were discovered by the Japanese 800 miles from Tokyo. We had hardly enough time to get courses and other data.

The mission orders were to proceed to Tokyo bomb our target; go back out to sea, proceed south around southern tip of island of Honshu hence to China; land at Chuchow, refuel; wait till dawn and favorable weather; take-off and fly to Chungking or if forced down, proceed to Chuchow and await orders.

Time of Take-off: 08:05 April 18, 1942 ( -10 time zone )

Weather:

Thin broken clouds 3000 to 5000 feet from ship to landfall. CAVU from landfall to target, with a thin broken to scattered SW of Tokyo out at sea 2000 to 5000 base of clouds. Clear and unlimited 100 miles south of Tokyo then high thin overcast gradually building up to rain and fog halfway across China becoming instrument conditions at least 100 miles from China coast. Over China heavy fog and heavy rain, occasional breaks in fog showing higher overcast, lower fog to broken to overcast mostly zero zero on ground.

Altitude desired:

Approach: Below 1500 feet.  
Bombing run: 1500 feet.

Actual altitude:

Flight to coast made at 500 feet except approach over land made in clouds at 3000' then diving out of clouds over target and releasing bombs at 2500 feet. Flight to China at 500 feet and gradual climb when reaching coast to 4000 feet then climb to 8000 feet when ship abandoned.

Bombs:

3 - 500 lb demolition, 1 - incendiary cluster (128 bombs) 500 lbs.

Ammunition:

920 rounds .50 cal. 2 - AP, 3 - incendiary, 1 - tracer  
700 rounds .30 cal. 2 - AP, 3 - incendiary, 1 - tracer

#### Target:

Primary: Japan Special Steel Company plants and warehouses in South Tokyo in Shiba Ward 1 1/2 miles N of Tana River.

Secondary: Any part of industrial area there or military objectives in vicinity.

#### Target bombed:

Primary target bombed with 2 - 500 lb demolition bombs scoring 2 direct hits and causing heavy damage. 1 - 500 lb demolition bomb dropped amid thick industrial area in Shiba Ward about 1/4 of a mile inshore. Incendiary cluster dropped over thickly populated and dense industrial residential sector immediately inshore from primary target. Extent of damage caused by 3rd demolition bomb not noted due to heavy AA fire and attack by 9 Zero type fighters. No barrage balloons over target and none sighted along Tana River.

#### Anti-Aircraft Opposition:

No AA Fire encountered until over Tokyo Bay when received light and ineffective fire from aircraft carrier which was steaming out of the bay. Heavy AA fire encountered over target. Not very large caliber, concentration mostly behind me but tracking good and bracket very close when evasive action taken and escape from AA fire made. Sustained one I AA hit in fuselage just forward of horizontal stabilizer about 8" in diameter. Not aware of any ground machine gun action although escape from Tokyo made at very low altitude. Encountered more AA fire West of Yokahama when leaving coast, light concentration of short duration, no hits. AA seemed to misjudge my speed but the elevation was very accurate. I suspect 3 gun batteries from the pattern of the bursts.

#### Pursuit Opposition:

Encountered nine Zero type fighters directly over target; they were at about 5000 feet and immediately peeled off in attack but misjudged by speed which I increased to 330 MPH indicated air speed in a dive after bomb release and I dove in under them. I also saw 3 Nakajima type fighters over Tokyo but they did not attack. 3 of the Zeros pursued me to [...page missing...]

[...page missing...]

...hit the ground quite suddenly as I could not tell when I was going to hit. I was not very far from the airplane but I realized that I was on a pretty steep slope and could see very little for the fog and rain. I was uninjured. I got out of my and got my mussette bag and wrapped myself up in my parachute and tried to sleep and keep warm and dry. The next morning it was still foggy and when it cleared enough for me to see I started for the wreck of the plane. I had to go up over the mountain i was on. I had landed on top of a high mountain on a steep slope with many boulders and cliffs. I realized that I was quite lucky that I was not seriously injured. The plane was only about a mile away but it took me four hours to get to it. When I arrived at the scene of the crash which was also very high up in the mountain I found a number of Chinese were there picking in the wreckage. I hailed them and made them understand that I was an American. They were friendly towards me. The plane had hit the side of the mountain and sprayed over a large area and had burned. I was able to salvage nothing from it. It was a total

loss. the Chinese former led me to a small village that day and the next day I met some Chinese soldiers who held me for a day and then led me over the mountains for two days until I reached Tunki Anhwei and the military police there got me a ride on a truck to Tanki and I took the train from there to Kimwa to Chuchow. I stayed at Chuchow three days then went by to Ningtu from there to Hengyang by bus which took three days and then a plane picked us up at Hengyang a day later and took us to Chungking.

/signed/  
RICHARD O. JOYCE  
1st Lt., Air Corps.  
0-4-1770

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SUBJECT: Report of Tokyo Raid  
TO: Brig. Gen. Doolittle

Airplane  
#40-2250</<  
tr>

Crew: Pilot, R.O. Joyce, 1st Lt.; Co-pilot, J.R. Stork, 2nd Lt.; Navigator, H.E. Crouch, 1st Lt.; Engineer-gunner, G.E. Larkin, Sgt.; Gunner, E.W. Horton, Sgt.

We took off from the carrier at approximately 08:05 o'clock ship time ( -10 zone) and I estimate that we were about 5 minutes behind Lieutenant Watson who took off just ahead of me. I was slightly delayed due to continued miss-firing of my right engine which finally cleared and functioned satisfactorily. I had no difficulty in getting into the air from the carrier. I circled the carrier once and flew over it parallel to its course which I new and set my gyro compass on the known course and set out for Tokyo at a general course of 270 degrees true. We sighted the Inubo Zaki point directly on course ahead of us at about 13:20 ship time. I flew at about 500 feet indicated altitude above the water for the first hour and a half when my gunner called and said that there was a twin engined plane above and in front of us. It was a Japanese patrol plane and it immediately dove out of the clouds and pursued me. I increased power and was able to outdistance the patrol plane which did not fire on me but I think recognized that I was the enemy. We did not fire on the patrol plane as it did not come within range. I estimate that this took place about 600 statue miles from Tokyo. I flew the last 500 miles into Tokyo at altitudes ranging from 1000 feet to 4000 feet in order to fly in the thin overcast and clouds to avoid detection. I used 28 inches of manifold pressure and about 1370 RPM and indicated between 150 and 165 MPH> Immediately after sighting Inubo Zaki point I turned south and flew about 10 miles south of the point before turning in over land. I turned west and flew over that short neck of land to Tokyo Bay at 3500 feet altitude. When I reached the bay I dove out of the clouds and located my target and lined up on course with the target at 2400 feet indicated and 210 MPH indicated with the bomb doors open. I encountered no pursuit until I was over I was over the target and no AA fire until I was over the bay. An Aircraft carrier was steaming out of the bay toward the Yokosuka Naval base and opened up on me with AA guns of presumably small caliber. That fire was very ineffective and inaccurate. I dropped two 500 lb. dem. bombs on the Japanese Special Steel Company main plant and both were direct hits. One bomb hitting directly in the center of a big plant and the other landing between two buildings destroying the end sections of both. The third dem. bomb and the incendiary were dropped in the heavy industrial and residential section in the Shiba Ward 1/4 of a mile in shore from the bay and my tat. My primary target was right on the shore of the bay. I encountered heavy AA fire over my target and since I took a long straight run on the target by the time my bombs were out I found myself in an AA bracket with the puffs and busts coming very close but generally behind me but catching up fast. At that time a formation of nine Zero fighters

came in above me and a little to my right in front. I increased power and went into a steep diving turn to the left to escape AA fire and pursuit. The fighters peeled off in attack and followed me but I dove in underneath them and for the moment eluded them. I got out of the AA fire. I indicated as high as 330 MPH in the dive and leveled out very close to the ground and hedge-hopped all the way out to sea at about 275 indicated air speed. I saw three Nakajima 97's above and to the left who pursued me but could not keep up with my speed. The Zero fighters, however, had a big altitude advantage and followed me. I shook all but three as I headed west toward the mountains. They did not seem too eager to come in too close to me as my rear gunner was firing his guns at them from time to time. One pursuit came along side of me and above me when I turned south at the mountains to go out to sea and we fired at him with everything we had and I believe that we hit but none of us are sure whether or not we knocked him down. I believe not. He was in a very good spot to deliver an attack but he did not and instead broke off combat and peeled off and left us. We released our bombs at approximately 14:40 o'clock ship time. I saw no barrage balloons anywhere over Tokyo, nor did my crew, however, there might have been some that we did not see since our attention was concentrated on our target and then in escaping the AA fire and pursuit airplanes and we did not have much of a chance to look at the ground. I encountered no machine gun fire from the ground to my knowledge. I left the mainland of Japan about 10 miles west of Yokohama. I encountered light AA fire again there but it came from some distance and was ineffective since I was flying very low and very fast. I was picked up and pursued by three pursuit which met me as I was leaving the mainland. I had begun to throttle back when they came in to attack and I increased power and climbed up into some clouds at 3000 feet and eluded them. I sustained a climb of 2000 feet per minute and outclimbed them. I left the mainland at about 13:55 ship time. I flew out to sea about 30 miles, out of sight of land and then headed south for the Oshima Strait at a heading of 244 degrees true. I sustained one anti-aircraft hit on my plane in the fuselage directly ahead of the horizontal stabilizer. It tore a hole in the fuselage about 7 inches in diameter. I also was hit in the left wing tip by machine gun bullets presumably from the pursuit but the damage was very slight. There were no injuries to my crew or to the engines. I sighted no enemy aircraft between Tokyo and China where I abandoned my plane. I sighted no enemy surface sea craft between Tokyo and the Chinese coast other than small fishing boats of which I saw many both between Tokyo and the Oshima Strait and between Oshima Strait and the China coast.

On approaching the coast of China I encountered adverse weather conditions namely fog and rain. I was forced to go on instruments about 100 miles from the China coast and remained on instruments until the time of leaving the ship. I had previously attempted to use my automatic flight control equipment but it was not functioning properly and I had to fly the ship manually all the way. I made the trip from Tokyo to China at about 500 feet altitude and 1300 RPM and started at 29 inches of mercury and gradually reduced to 25 inches as my gas load reduced. I indicated about 160 to 165 MPH. I picked up a strong tail wind across the China Sea which enabled me to go as far as I did. I held a course of 261 degrees true from the Oshima Strait to China. About the time that my navigator estimated that I should begin to gain altitude for the mountains on the coast we were low enough to the water that we spotted an island and got a few glimpses of land as we came in over the coast. It was getting dark and still foggy and raining and getting worse. There was an overcast above us. We crossed the coast at about 20:40 o'clock ship time and I believe about 40 miles south of the entrance to Hangchow Bay. I climbed to 4000 feet over land and continued on course. I figured I had enough gas to just get me about as far as Chuchow and not much further. I figured my consumption roughly at about between 65 and 70 gallons per hour. I know it was less than 70 gallons per hour after leaving Tokyo. As we neared our ETA at Chuchow I realized that the weather was such that we could never expect to make a landing so I told the crew to get ready to bail out and I slowed the ship up to 125 MPH. I climbed to 9000 feet with about less than 15 minutes of gas left and told my rear gunner to jump which he did, we then released the escape door in the front when we were sure that it would not hit the rear gunner and the engineer-gunner, navigator, co-pilot and myself then jumped in that order.



I rolled the stabilizer back to keep the ship from gaining too much speed and then I worked myself around to get out of the cockpit and had some trouble in squeezing between the armor plate back of the pilot and co-pilot seats and had to keep pushing the stick forward to keep the ship from stalling. I had little time to do anything after I got in position to jump. I gathered some food and equipment and jumped out through the escape hatch in the navigator's compartment where the rest of the crew had left except the rear gunner. I left the engines of the ship running. I dropped clear of the ship and pulled the rip cord and the chute opened and functioned perfectly except that the metal sheared on one of the leg strap buckles and the leg strap on my left leg parted and almost dropped me out of the chute. I slid down and the chest strap came up and smacked me in the chin with a stunning blow and at the same time jerked my pistol out of my shoulder holster and tossed it out into space. I was swinging quite badly and had some time to stop that but finally did. I estimate that I floated about one minute. I heard the plane below me and it hit the side of a mountain and exploded and burst into flame. A few second later I hit the ground which was quite a surprise to me. I was not very far from the airplane but I realized that I was on a pretty steep slope and could see very little for the fog and rain. I was uninjured. I got out of my chute and got my mussette bag and wrapped myself up in my parachute and tried to sleep and keep warm and dry. The next morning it was still foggy and when it cleared enough for me to see I started for the wreck of the plane. I had to go up over the mountain that I was on. I landed on top of a high mountain and on a steep slope with many boulders and cliffs. I realized that I was quite lucky that I was not seriously injured. The plane was only about a mile away but it took me four hours to get there. When I arrived at the scene of the crash which was also very high up in the mountains I found a number of Chinese there picking in the wreckage. I hailed them and made them understand that I was an American. They were very friendly. The plane had hit into the side of the mountain and sprayed over a large area and had burned. I was able to salvage nothing from it. It was a total loss. The Chinese farmers took me to a town that day and the next day I met some Chinese soldiers who took me to Tunki, Anhwei and eventually I made my way to Chuhsien, Chekiang. We abandoned the plane between 22:00 and 22:10 ship time. We flew for over 14 hours. I did not reach Tunki until four days later and Chuhsien a week later.

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Chungking, Szechwan  
May 2, 1942.

SUBJECT: Mission Report on Doolittle Project, April 18, 1942.

TO: Brigadier General J.H. Doolittle.

Type Ship: B-25 B (North Amrican) #40-2249.

Crew:

Pilot -- Capt. C.R. Greening o-22443  
Co-Pilot -- 2nd Lieut. K.. Reddy 0-421131  
Navigator -- 2nd Lieut. F.A. Kappeler 0-419579  
Bombardier -- S/Sgt. W.L. Birch 6461172  
Eng. Gunner -- Sgt. M.J. Gardner 6296448

Orders:

The mission was voluntary called from Lexington Field, Columbia, S.C., to proceed to Eglin Field, Valparaiso, Fla., to learn the nature of the mission, perform necessary changes and maintenance on the ships, and conduct a training program involving simulated conditions that could be expected during the actual mission.

The project was ordered to McClellan Field, Sacramento, Calif., for final preparations before loading aboard the U.S.S. *Hornet*, Alameda Naval Base.

Objective folders, maps, navigation, and other pertinent data were covered enroute.

Orders for take off were given without warning. No last minute preparations such as weather data at target enroute or destination were given. We were to report to Chuchow, China, as soon as possible if separated from ships.

Time of T.O. 0855 U.S.S. *Hornet* time

Altitude desired:

Bombing altitude: 1500 feet  
Approach: under 1500 feet

Actual Altitude:

Bombing: 600 feet  
Approach: Surface to 3000 feet and up to 10000 over China

Weather:

Broken clouds to Tokyo  
Clear and unlimited over Tokyo  
Enroute to China: Broken to overcast  
Over China; Low overcast with rain

Bombs:

4 - 500 lb incendiary clusters  
All bombs operated without malfunction.

Ammunition:

800 rounds .50 Cal.  
800 rounds .30 Cal.  
All ammunition load 2 tracer, 3 incendiary and 1 armor piercing.

Target:

Oil refineries, docks, warehouses and home industrial area, Yokohama.

Secondary Target:

At will according to situation.

Pursuit opposition:

Several flights were observed. Attack made only by four apparently Zero fighters with inline engines. 6 guns firing forward using either incendiaries or tracers. Hits were observed on right wing with no apparent damage other than dents in wing. Two pursuit were observed to be hit seriously enough to leave attack, one on fire. Neither were seen to crash. After bombs were released no difficulty was encountered in outrunning pursuit.

Mission report:

A large oil refinery and storage tank area was bombed with apparent complete success. Target used was camouflaged by roof tops to conceal work wherever possible. A large black column of smoke could be seen as result over 50 miles away.

Three small boats were attacked using .30 Cal nose gun. One gun burned. Estimated size 50 to 60 feet long.

/signed/  
CHARLES R. GREENING  
CAPTAIN, AIR CORPS  
PILOT.

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Chungking, Szechwan, China,  
May 2, 1942.

SUBJECT: Mission report of Doole project on April 18, 1942.  
TO: Brigadier General James H. Doolittle.

AIRPALNE TYPE:

B-25-B 402228

CREW:

Pilot -- 1st Lt. William Bower.  
Co-Pilot -- 2nd Lt. Thadd Blanton.  
Navigator -- 1st Lt. William R. Pound.  
Bombardier - T/Sgt Walso J. Bither.  
Eng-Gun. -- S/Sgt Omer A. Duquette

ORDERS:

To proceed from Minneapolis to Columbia, S.C. where crew was completed, then to Eglin Field, Florida, at which time the purpose of the mission was to be revealed, necessary training of crew accomplished and alterations of the ship made. Final preparation to be made at McClellan Field, Sacramento, California, prior to boarding the aircraft carrier U.S.S. *Hornet* at Alameda, Calif.

Target location was revealed at sea and all maps, objective folders and navigation data were covered by the crew enroute.

Take-off was ordered at 7:30 AM April 18, 1942 without sufficient warning to enable crew to gather necessary position, weather, etc., data.

Individual orders were to report to Chuchow for gas, then proceed to Chungking or if forced to land elsewhere or otherwise hold at Chuchow for further orders.

#### TIME OF T.O.

0910 April 18, 1942.

#### WEATHER:

Broken clouds from ship to landfall.

Clear from that point to target with high overcast 100 miles south to 300 S.W.

Clear to southern tip of Japan.

Broken to overcast 1000 ft. turning to W.

Instrument conditions encountered 1:30 hrs. before landfall of China coast.

Over China overcast from surface to 11,500 occasional breaks heavy rain.

#### ALTITUDE DESIRED:

Approach: below 1500 ft.

Bombing: 1500 ft.

#### ACTUAL ALTITUDE:

Surface and ground level approach, bombing at 1100 ft., surface to point :30 before E.T.A. of China coast, gradual climb to 11500 ft.

#### BOMBS:

3 - 500# demolition 1 - incendiary cluster (500#).

#### AMMUNITION:

900 rds .50 cal. 3 AP, 2 incendiary

700 rds. ..30 cal. 3 AP, 2 incendiary

#### TARGET:

Ship yard and docks at Yokohama.

Secondary: any military objective within vicinity.

Barrage balloons at target made choice of secondary necessary.

#### TARGET BOMBED:

Oil refinery, tank farm, warehouse, 2 miles ENE of target.

#### ANTI-AIRCRAFT OPPOSITION:

Heavy AA was encountered just prior to bomb release point from S, W, N, range was poor, elevation good. No hits were made on ship. After bomb release rapid descent to surface was made and AA was seen to score hits on barrage balloons causing their destruction. AA continued from rear and also from hill to the west until approximately two miles at sea. Bursts were of five, tracking excellent.

#### PURSUIT OPPOSITION:

No actual attack was made by enemy pursuit. Several biplanes evidently of obsolete type followed the plane at 1000 yds. for fifteen minutes but did not offer attack.

#### MISSION REPORT:

Bombs were released in sequence on large warehouse, railroad siding at refinery and tank farm. Warehouse was seen to be hit and fired. Railroad tracks and tank cars also hit. Effect of last bomb and incendiary was not noticed due to heavy AA. Speed of run 200 m.p.h. altitude 1100 ft.

One weather boat was sunk 100 miles east of Japan. No other attacks made by machine guns.

#### VAL IN CHINA:

Crew was assembled in navigators compartment when landing appeared impossible. At 23:30 the crew left the ship at five second intervals, followed in twenty seconds by the pilot. Ship was at 11500, on AFCE at 120 m.p.h.

I landed on a mountain with no ill effects, wrapped up in the silk and slept till 5:30 AM. Crew had been told to do likewise and await dawn before attempting to locate each other. The next morning I started down the mountain and walked east for several hours, then N.E. At a small village a school teacher was able to locate direction and distance of Chuchow. Walked SE till dark and slept until dawn. Three of the crew joined me at this village. The fourth joined us at noon the next day. Natives carried us to Sian where a car took us into Chuchow. Six nights were spent at Army Air station there and on Saturday evening we left by train for Yun San. A bus met us and in this we traveled three days to Heng Yang. A plane met us there and brought us to Chungking.

/signed/  
WILLIAM M. BOWER  
1st Lt., Air Corps.

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Subject: Mission Report of Doolittle Project on April 18, 1942

To: Brigadier General James H. Doolittle

Airplane type -- B-25-B

Crew:

Pilot -- 1st Lt. Edgar E. McElroy

Co-pilot -- 1st Lt. Richard A. Knoblock

Navigator -- 1st Lt. Clayton J. Campbell  
Bombardier -- Sgt. Robert C. Bourgeois  
Eng. Gunner -- Sgt. Adam R. Williams

Orders: To proceed to Eglin Field, Florida, for special training of personnel and alterations to ship for the purpose of participating in secret mission. To proceed to McClellan Field, California for final alterations to ship and outfitting of crew and ship. To proceed to Alameda Naval Air Station to board aircraft carrier.

Target were assigned at sea and necessary maps, objective folders, etc. were furnished for study. Takeoff order was given at 07:30 o'clock April 18, 1942, when 810 statute miles due east of Tokyo. Orders were to bomb target and proceed to Chuchow for refueling and then proceed to Chungking. Carry no papers to identify origin of flight, destroy ship in case of forced landing in enemy territory and under no circumstances go to Russia.

Time of T.O.: 0900 April 18, 1942

Weather: Broken clouds at 5,000 ft. from ship to within 50 miles of Japan. Ceiling unlimited ground visibility about 30 miles due to smoke or haze. Weather clear to approximately southern tip of Japan, then rapidly lowering overcast. Instrument conditions about 100 miles off China coast due to low ceiling, rain, fog and darkness continuing until time of bail out at 2245.

Approach:

Altitude desired: Close to land and sea as possible.

Bombing: 1500 ft.

Actual altitude: Approach -0 close as possible to sea and land pulling up to 1300 ft. for bombing and immediately returning to low levels.

Bombs: 3 - 500 lb. demolition  
1 - 500 lb. Incendiary (cluster)

Ammunition: 650 rds. 560 cal. 3 AP, 2 incendiary, 1 tracer  
800 rds. 30 cal. 3 AP, 2 incendiary, 1 tracer

Target: Yokosuka Naval Station  
Target bombed: Same

Anti-aircraft opposition: Heavy anti-aircraft fire was encountered over target. Accuracy was fair. (proper altitude and speed, but no hits were made.)

Pursuit opposition: No pursuit was observed.

Mission report: Bombs were released as planned, from East to West across workshop and building slip area. Demolitions released at 1 1/2 sec. Intervals followed 3 sec. Later by incendiary cluster. All bombs were believed to have taken maximum effect.

Arrival in China: When landing was seen to be impossible due to instrument conditions, the crew was assembled in navigator's compartment and told to assemble everything they wanted to bail out with.

Each man wore life jacket, gun belt with gun, knife, canteen, extra clips and first aid pack and flashlight. Ship was on an A.F.C.E. heading of 260° M. speed 160 M.P.H. Crew bailed out close together as possible at 2245 o'clock. I went last retarding throttles completely before leaving ship. Everyone landed safely except Sgt. Williams who landed in tree and wrenched his knee slightly. Lt. Knoblock and I located each other about 0100 the next morning, slept until daylight and then began trying to find out from natives where we were. About 1000 o'clock Lt. Campbell and Sgt. Bourgeois joined us at the village where we were and we soon began going south with a guide. We reached a garrison about 1100 and were joined there about 1130 by Sgt. Williams, completing our crew. The soldiers began taking us south. We stopped at a small village overnight, having ridden the last 3 hrs. on ponies. The next morning we were furnished sedan chairs starting about 1000 and arriving at Poyang about 1700 o'clock. We were given a nice reception, furnished a nice supper by the Sisters of the Mission and put to bed. We stayed in Poyang the next day and night, were well taken care of and the next morning boarded a steam launch taken all day to go to Yingtan. We stayed there that night, were given a banquet the next day by General Liu and left by train at 2000 for Chuchow. At 0700 the next morning we left the train because of an air alarm. The engine was machine gunned by 3 planes about 15 minutes later doing no damage, but we were not allowed to board the train again until 1600 o'clock arriving at Chuchow about 1730 o'clock. We stayed at Chuchow about 3 days. We went by train to Yingtan, 3 days by bus to Hengyang, 1 day there and a plane was sent for us from Chungking. We arrived in Chungking on May 3. All the Chinese had been very nice to us and did all they could for our comfort.

EDGAR E. MCELROY,  
1st. Lt. A.C.

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Chungking, China  
May 5, 1942.

Subject: Brigadier General J.H. Doolittle.  
From: Airplane No. 40-2297  
Pilot -- Major John A. Hilger  
Co-Pilot -- 2nd Lt. Jack A. Sim  
Bomb-Nav. -- 1st Lt. James H. Macia  
Eng. -- S/Sgt/ Jacob Eierman  
Gunner -- S/Sgt. Edwin V. Bain

Orders: To proceed from Columbia, S.C., to Eglin Field, Fla., for installation of special equipment and completion of specialist training program. From Eglin Field, Fla., to Sacramento Air Depot for installation of more special equipment and final checks and then to Alameda Naval Air Station to be loaded aboard the U.S.S. *Hornet*. After sailing, all information was given out as to targets, routes, and probable time of attack. Take-off was ordered by the Naval Commander, however, ten hours prior to contemplated take-off due to interception of the naval force by an enemy sea craft. Take-off position was at Lat. 35° I O N, Long. 153° 23' E. Due to suddenness of orders no weather data was available and no new instructions were given. Each pilot took off on his original orders to bomb his individual targets and proceed to ChuChow for fuel and thence to Chungking. Definite orders were issued not to go to Russia.

Time of  
Takeoff: 09:13 April 18, 1942.

Weather: From take-off to within 200 miles of Japanese coast: scattered clouds with occasional rain showers. Visibility unlimited except in rain showers. Wind SW 12.

From 200 miles east of Japan to 300 miles east of China coast: Clear to high thin scattered clouds. Visibility unlimited. Wind varied from light shifting winds to E20 after passing the southwestern tip of Japan, then slowly swung to S5.

From 300 miles east of China to destination: Overcast lowering to 300 feet with heavy intermittent rain. Visibility fair except in rain squalls. Instrument conditions from 100 miles off shore to destination with heavy rain. Ground winds at destination NE gusty up to 15 m.p.h.

Altitude desired: Approach: minimum  
Bomb: 1500'  
Withdrawal: minimum

Actual Altitude: Approach: below 100'  
Bombing: 1500'  
Withdrawal: below 100 ft.

Bombs: 4 - 500# incendiary clusters.

Ammunition: 900 rounds .50 cal. 3 AP, 2 incendiary, 1 tracer  
500 rounds. 30 cal. 3 AP, 2 incendiary, 1 tracer

Targets: Military Barracks at Nogoya Castle  
Oil storage warehouse NW of business district  
Military Arsenal in center of Nogoya  
Mitsubishi Aircraft Works on waterfront<>

Secondary: Any military objective.

Targets Bombed: Primary targets.

Anti-Aircraft Opposition: Moderate AA fire was encountered when we pulled up east of Nogoya to get our bombing altitude. Accuracy was very poor but altitude of bursts was exact. AA fire continued for ten minutes after we departed the target area. Size of bursts indicated 37-40 mm shells.

Pursuit Opposition: Only one plane was seen in the air over Nogoya and it was not identified as to type and offered no attack.

Mission Report: All primary targets were squarely hit and when we were 20 miles south on our way out we observed a tall column of heavy black smoke with a mushroom head standing over Nogoya. The rear gunner saw many fires start in the military barracks. Speed of bombing run 220 m.p.h. Indicated.

Arrival in China: When it became apparent that no landing could be made at ChuChow I warned the crew to get ready to abandon ship. When over the estimated position of ChuChow I had the rear gunner, Engineer, Navigator and Co-pilot jump in order. After they were free of the ship I trimmed it for level flight (A.F.C.E. Not operative) and abandoned ship.

I landed on a very rough mountain-top with only minor bruises. I wrapped in my chute and spent the night where I landed. The next morning I walked to a village at the foot of the mountain where I had landed and one of the villagers guided me to a road where we were met by a truck load of soldiers. I identified myself and showed them on the map the approximate location of my plane and the rest of the



crew. They took me to Kuang Feng where I met three of my crew and spent the night. During the night my other crew member came in and the next morning the five of us proceeded by motor to Shang Jao and from there to ChuChow by train. We remained at the ChuChow air station until April 28 when we departed by train, bus and plane for Chungking. We arrived at Chungking on May 3, 1942 at 12:40.

JOHN A HILGER  
Major, Air Corps.

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REPORT OF AIRPLANE NO. 40-2297

Take-off was made at 09:15 and approximately five minutes after previous ship had taken off. No difficulty experienced on take-off.

A course of 268° Magnetic was flown from the carrier and landfall was made near the cliffs south east of Tokyo. Course was then changed to parallel the coast until a point five miles off shore and south of Nagaya was reached.

One enemy patrol plane (similar to B-26 in appearance) was encountered 600 miles east of Tokyo but it is believed he did not see our planes.

The bombing attack was delivered at 15:20 (-10 zone time) and the targets attacked were (1) Military Barracks in Nagaya Castle Grounds, (2) Oil and Storage warehouse, (3) Military Arsenal, (4) Mitsubishi Aircraft plant south of Nogaya. All the targets were the originally selected ones and all were squarely hit with incendiary clusters. Bombing approach was made at minimum altitude and bombs were dropped at 1500 feet and 200 m.p.h. Indicated. The rear gunner saw many small fires start and when we were thirty miles south on and way out and approximately 10 minutes after the bombing we could see a tall column of heavy black smoke over the city. I would estimate the height of the column to be 5000 feet and the mushroom head on the column would indicate very intense fires.

After the bombing only one enemy plane was seen to take off. It was a small monoplane but never attacked our ship and disappeared soon after it was sighted.

The volume of A.A. fire was moderately heavy but accuracy was very poor. Only two or three shots were close enough to be uncomfortable. The size of the bursts indicated that the shells were of 37-40 mm in size. No machine gun fire was encountered. No barrage balloons were encountered.

While over Japan our entire crew was impressed with the drabness of the cities and the difficulty of picking out targets. All building were grey and very much the same in appearance. The cities did not look at all the way we expected them to look from the information in our objective folders and on our maps.

The maps which we used were misleading because the contour interval was too great. We had expected to make a very low approach from the sea into Nogaya but were forced up to almost 1000 feet at times by low hills which did not show on the charts.

After the attack a course of 180° was flown until 15:45 at which time we were 20 miles off shore. Course was then changed to 225° and held until 16:00 at which time course was altered to 252°. The southern tip of Japan was passed at 19:18 and altered course to 262°.

After leaving Nogaya six cruisers and one aircraft carrier were sighted. Three cruisers and one carrier were in one group and three cruisers were in another group. These two groups were about fifty miles apart off the south coast.

About 300 miles off the China Coast we encountered rain squalls and lowering ceilings and about 100 miles off the coast at 20:15 the weather got so bad that we pulled up to 1000 feet and went on instruments. At 21:05 we estimated we should be over the coast line and started climbing to 7,000. We saw a few breaks but very few lights on the ground. At 22:20 we estimated we were over ChuChow and still on instruments. We had about 40 gallons of gas left and I changed altitude to 8,500 and ordered the crew to jump. The crew abandoned the ship quickly and with no confusion. After the co-pilot jumped I trimmed the ship for flight at 170 m.p.h. (A.F.C.E. Not operative) and abandoned ship.

I heard the plane crash shortly after my chute opened and the site was later visited by the co-pilot. The ship was badly smashed and had been stripped by vandals.

No injuries to crew members other than bruises and sprains.

The entire route was flown at 100' except when making the bombing runs and when on instruments near the China coast.

Only a few of those who jumped managed to save any rations, etc. and it might be advisable to construct as an integral part of the parachute harness a pouch that will carry matches (waterproof), condensed ration and a sheaf knife. Each crew member carried a compass and very few of these were lost. The gun belts carried the gun, canteen, first aid packet and twenty rounds of ammunition. Only two of these were lost in jumping.

When I landed from my jump I was shaken up but not seriously injured I was on a very steep mountain so I made a tent of part of chute and rolled up in the rest of it and spent the night there. The next morning I discovered a small village at the foot of the mountain and one of the villagers took me to a road where I met a military party out searching for us. I was taken to Kwang Feng, about 15 miles from where I landed and then sent to Chuchow the next night.

Pilot - Major John A. Hilger  
Co-pilot -- Lt. Jack A. Sims  
Navigator-Bombardier -- Lt. James H. Macia  
Engineer -- S/Sgt. Jacob Eiierman  
Gunner -- S/Sgt. Edwin V. Bain

JOHN A. HILGER  
Major, Air Corps,  
Pilot 40-2297  
A.S.N. 0-2437  
89th Recon. Sq.  
17th Bomb. Grp.

Mrs. Virginia B. Hilger  
83 Parkton Road, Jamaica Plans, Mass.

Chungking, China,  
May 4, 1942.

## PERSONAL REPORT

Ship No. 0-2247  
Pilot -- Lt. E.E. McElroy -- 0-421122  
Co-Pilot -- Lt. R.A. Knobloch  
Navigator - Lt. C.j. Campbell  
Bombardier -- Sgt. R.C. Bourgeois  
Gunner -- Sgt. A.R. Williams

Take-off was accomplished at 0900 approximately 3 minutes after preceding ship. Take-off was very much like normal take-off. Capt. Greening who was our flight leader and Lt. Bower who was on his right wing were still in sight, so by using about 1475 rpm and about 29 inches, indicating about 170 mph, we were able to overtake them in about 30 minutes. We flew in formation with them on about 282 degrees (M) until landfall was made at about 1330. We had suspicion for some time that were too far north, so at about 1345 we took a course of about 250 degrees and reached land at about 1400.

Immediately after crossing the coast line we decided we were still too far north so went back out to sea a safe distance from shore fire and started following the coast line. Later calculation showed that we had hit the coast about 50 miles too far north. We had seen no enemy aircraft and no very sizeable surface craft before we reached the coast except numerous small fishing boats. As we were following the coastline south, we saw about 4 freighters, apparently engaged in coastline shipping. At about 1420 we estimated that we were due east of our target, so we turned inland. Misjudging our position slightly, we came to an airfield on the southeast shore of Tokyo harbour, where we were fired upon with extreme inaccuracy. We immediately determined our position at this point and proceeded northeast to our target.

We bombed our target exactly as planned approaching from the east at about 1300 ft. and 200 mph indicated. Bombs were dropped in congested building area at about 1440 o'clock. The large crane was seen to be blown up and a ship in the building slips was seen to burst into flames. It is believed that all bombs fell in congested building and construction area. When some 30 miles to sea, we could see huge billows of black smoke rising from the target.

We encountered no enemy aircraft but heavy AA fire over target was fairly accurate. We saw no barrage balloons. After bombing we immediately headed out to sea on a course of about 220 degrees. When well out to sea we turned southeast and headed for Yaka Shima islands, passing just to the south of these islands at about 1915.

About halfway between our target and Yakashima Island we sighted a large submarine apparently at rest, and about 15 miles further on we sighted three large cruisers headed toward Japan. We ran in to instrument weather about 1<sup>1</sup>/<sub>2</sub> hours short of the China coast, although it had been overcast since leaving Yaka Shima. At about 2100 we climbed to about 6,000 ft. We had flown a compass course of 260 degrees since leaving Yaka Shima. At 2230 we began preparing to bail out. Each man filled his canteen, put on his life vest, and filled a bag with rations, etc. All five men were assembled in the navigator's compartment. The ship was on A.F.C.E. We bailed out as close together as possible at 2245 so as to be together on the ground. I bailed out last, pulling the throttles all the way back before doing so. I did not go to the plane myself but Sgt. Williams went to it and said it was completely burned up. Sgt. Williams received a wrenched knee when he lit in a tree, but it was OK in a few days. Lt. Knobloch cut his hip when he bailed out, but it healed OK in a few days.

The entire trip was made at 166 mph indicated, following the cruise chart accurately. We bailed out about 75 miles north of Poyane. All landed safely except Williams who landed in a tree and injured his knee slightly.

Lt. Knobloch and myself located each other about 0100 the next morning. Early the next morning we walked to the first village and after some difficulty with sing language they began leading us, as we later found out, toward soldiers. About 1000 o'clock as we were making a stop for some reason or another, we were joined by Lt. Campbell and Sgt. Bourgeois, and about 1100 o'clock we were joined by Sgt. Williams.

The people kept taking us south and about noon we were met by the first soldier, who took us to the first garrison. All the people and soldiers were very kind to us and made every effort to make our journey to Chusien comfortable.

EDGAR E. MCELROY  
1st. Lt. U.S. Army Air Force

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## APPENDIX I

### INDIVIDUAL REPORTS OF SEVEN PILOTS

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Chungking, China  
May 4, 1942.

#### PERSONAL REPORT

Take off at 8:20 A.M. ship time.

Take-off was easy. Night take-off would have been possible and practicable.

Circled carrier to get exact heading and check compass. Wind was from around 300°.

About a half hour after take-off was joined by AC 40-2292, Lt. Hoover, pilot, the second plane to take off.

Abut an hour out passed a Japanese camouflaged naval surface vessel of about 6,000 tons. Took it to be a light cruiser.

About two hours out passed a multi-motored land plane headed directly for our flotilla and flying at about 3,000 ft. -- 2 miles away.

Passed and endeavored to avoid various civil and naval craft until land fall was made north of Inubo Shuma.

Was somewhat north of desired course but decided to take advantage of error and approach from a northerly direction, thus avoiding anticipated strong opposition to the west.

Many flying fields and the air full of planes north of Tokyo. Mostly small biplanes apparently primary or basic trainers.

Encountered nine fighters in three flights of three. This was about ten miles north of the outskirts of Tokyo proper.

All this time had been flying as low as the terrain would permit.

Continued low flying due south over the outskirts of and toward the east center of Tokyo.

Pulled up to 1,200 ft., changed course to the southwest and incendiary-bombed highly inflammable section. Dropped first bomb at 1:30 (ship time).

Anti-aircraft very active but only one near hit.

Lowered away to housetops and slid over western outskirts into low haze and smoke.

Turned south and out to sea.

Fewer airports on west side but many army posts.

A consensus on the part of crew members is that the upper turret on the B-25B, while far better than the lower turret, is entirely unsatisfactory. Two 24-volt generators went out shortly before take-off and a third plane had trouble with the turret's electrical system thus putting three out of sixteen turrets out of action at a time too late to make repairs. Far more trouble is experienced with the Azimuth motor than with the altitude motor. This is probably due to the fact that the Azimuth motor is used much more than the altitude motor particularly while the gunner is searching for enemy aircraft. The control of the turret is entirely unsatisfactory. It is our understanding that this will be corrected, in part at least, with the new control to be installed. The telescopic sight is unsatisfactory in that it collects dust and moisture and the cone of vision is too small. It is our understanding that this also is being corrected in future sights.

The 30-caliber nose gun installation is entirely unsatisfactory. It is impossible to quickly shift from one position to another under actual combat conditions, particularly if the gun has been fired and the adaptor warmed up and expanded. The glass molding for the nose gun is not strong enough and cracks after a few rounds are fired. It is strongly recommended, in this type of installation, that two 50-caliber hand-operated guns be located low in the nose with an angular movement of about 60° down from the horizontal and 30° to port and starboard. These guns would be operated by the bombardier after he had dropped his bombs. They should lock in the upper forward position (with the line of fire parallel to the longitudinal axis of the airplane) and in that position be operatable by the pilot. Had we had such an installation we could have done a great deal more damage. A similar set of guns located near the position of the present rear turret would provide some protection aft and be cleaner and lighter than the present turret in addition to being simpler and more effective.

Passed over small aircraft factory with a dozen or more newly completed planes on the line. No bombs left. Decided not to machine gun for reasons of personal security.

Had seen five barrage balloons over east central Tokyo and what appeared to be more in the distance.

Passed on out to sea flying low.

Was soon joined again by Hoover who followed us to the Chinese coast.

Navigator plotted perfect course to pass north of Yaki Shima.

Saw three large naval vessels just before passing west end of Japan. One was flatter than the others and may have been a converted carrier.

Passed innumerable fishing and small patrol boats.

Made land fall somewhat north of course on China coast.

Tried to reach Chuchow on 4495 but couldn't raise.

It had been clear over Tokyo but became overcast before reaching Yaki Shima.

Ceiling lowered on coast until low islands and hills were in it at about 600'. Just getting dark and couldn't live under overcast so pulled up to 6,000 and then 8,000 ft. in it. On instruments from then on though occasionally saw dim lights on ground through almost solid overcast. These lights seemed more often on our right and pulled us still farther off course.

Directed rear g to go aft and secure films from camera (unfortunately they were jerked out of his shirt front where he had put them, when his chute opened.)

Decided to abandon ship. Sgt. Braemer, Lt. Potter, Sgt. Leonard and Lt. Cole jumped in order. Left ship on A.F.C.E., shut off both gas cocks and I left. Should have put flaps down. This would have slowed down landing speed, reduced impact and shortened glide.

All hands collected and ship located by late afternoon of 19th.

Requested General Ho Yang Ling, Director of the Branch Government of Western Chekiang Province to have a lookout kept along the seacoast from Hang Chow bay to Wen Chow bay and also have all sampans and junks along the coast keep a lookout for planes that went down at sea, or just reached shore.

Early morning of 20th four planes and crews, in addition to ours, had been located and I wired General Arnold, through the Embassy at Chungking, "Tokyo successfully bombed. Due bad weather on China Coast believe all airplanes wrecked. Five crews found safe in China so far."

Wired again on the 27th giving more details.

Discussed possibility of purchasing three prisoners on the seacoast from Puppet Government and endeavoring to take out the three in the lake area by force. Believe this desire was made clear to General Ku Cho-tung (who spoke little English) and know it was made clear to English-speaking members of his staff. This was at Shangjao. They agreed to try purchase of three but recommended against force due to large Japanese concentration.

Left airplane about 9:20 (ship time) after 13 hours in the air. Still had enough gas for half hour flight but right front tank was showing empty. Had transferred once as right engine used more fuel. Had

covered about 2,250 miles, mostly at low speed, cruising but about an hour at moderate high speed which more than doubled the consumption for this time.

Bad luck:

- (1) Early take-off due to naval contact with surface and aircraft.
- (2) Clear over Tokyo.
- (3) Foul over China.

Good luck:

- (1) A 25 m/h tail wind over most of the last 1,200 miles.

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Take-off should have been made three hours before daylight, but we didn't know how easy it would be and the Navy didn't want to light up.

Dawn take-off, closer in, would have been better as things turned out. However, due to the bad weather it is questionable if even daylight landing could have been made at Chuchow without radio aid.

Still feel that original plan of having one plane take off three hours before dusk and others just at dusk was best all-around plan for average conditions.

Should have kept accurate chronological record.

Should have all crew members instructed in exact method of leaving ship under various conditions.

J.H. DOOLITTLE  
Airplane AC 40-2344 -- B-25B

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REPORT OF NAVIIGATOR ATTACHED TO  
COL. DOOLITTLE'S REPORT

1. Take-off 35° 43'N 153° 25'E.
2. Landfall 36° 20'N 140° 40'E. Time 1300, altitude 200'.
3. Passed Yaki Shima 30° 30' 130° 00. Time 1700, altitude 500'.
4. Landfall China coast 29° 40'N, 122° 20'E. Time 2010.
5. Left airplane time 2115-2120. Position 30° 15' 119°, altitude 8000'.

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APPENDIX II

MAPS SHOWING COURSES OF AIRPLANES AND  
INFORMATION GAINED AS A RESULT.

1. Course maps by Major Greening.

2. Landing Points planes (produced from pilot interviews by AFDIS/OD).
3. Airplane course over Kobe
4. Airplane course over Nagoya
5. Master course map.

**NOTE:** The quality of the map provided the National Archives (presumably the original was microfilmed, then a print made from microfilm, and photocopied at my request) is too poor to bother scanning and reproducing here. *pwc*

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Key to Landing Points -- Crews

MAP NUMBER	PLANE NUMBER	PILOT	LANDING
0	2344	Lt. Col. Doolittle	70 miles north of CHUCHOW near TEIN MU SHEN
1	2292	Lt. Hoover	Near NINGPO on coast
2	2282	Lt. Holstrom	Went to CHUNGAN
3	2283	Capt. Jones	Mountains southwest of CHUCHOW
4	2270	Lt. Gray	South of CHUCHOW in mountains
5	2247	Lt. McElroy	Near Lake POYANG
6	2298	Lt. Hallmark	Near Coast
8	2303	Lt. Watson	100 miles south of POYANG Lake
9	2250	Lt. Joyce	30 miles north of CHUCHOW
10	2249	Capt. Greening	40 miles southwest of HWEICHOW
11	2278	Lt. Bower	50 miles northwest of CHUCHOW
12	2268	Lt. Farrow	Near Lake POYANG (also reported on coast>
13	2297	Major Hilger	Southeast of SHANGJOA (KWANGSINFU)
14	2267	Lt. Smith	1/2 mile off coast
15	2261	Lt. Lawson	On coast

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APPENDIX III

TURRET TROUBLES AND GUNNERS OPINIONS

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[...page missing...]

Our greatest weakness and it is felt that the greatest weakness of most Air Corps units is the lack practical firing experience on the part of the gunners. It is quite impossible to make good aerial gunners through "simulation." It is necessary that they have an opportunity to fire a great number of rounds at various types of targets.



It is found difficult to use the turret throat microphones for inter-plane communication. Better results were obtained if the microphones were held against the throat by hand. This was not possible for a gunner when both of his hands were occupied. It is suggested that some means be provided to hold the throat microphones securely against the throat without choking the wearer.

J.H. DOOLITTLE

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Chungking, China  
May 2, 1942

### BENDIX UPPER TURRET

These following suggestions and faults were found in actual combat on the B-25-B type airplane.

The gun sight was found very unsatisfactory. Due to login of sight (with dehydrators installed) to dust particles in sight which were impossible to clean out unless sight was completely disassembled. This required at least 24 hours maintenance. The sight is not dust proof. The image did not appear as it naturally would bar eye. It was also found very difficult to pick up the target in the sight after once sighting same. This is due to the limited angle or cone of sight. It is believed that these defects of the sight alone decrease the effectiveness of fire at least 60%.

It is suggested that some type of open ring and post sight be incorporated with this turret, or some sight which will give the gunner complete range of sight. This is the most important factor to be stressed of all the faults found on this instance.

In the turret general it was found that in operating the turret for 12 hours almost continually that the azimuth motor was used at least 95% more than the elevation motor. This resulted in azimuth motor failures although the motors had been carefully inspected and maintained prior to the mission.

It is suggested that a stronger azimuth motor be used in this turret.

It was also found that the system of relay switches and power transmitting relays is entirely unsatisfactory due to excessive arcing which requires a great deal of maintenance. These relays will also go bad in so short a time that after 1/2 hour of use the turret will become very rough decreasing efficiency.

It is also desired that a microphone button be placed on the control handle as it is some times required to be used instantly and must be more accessible than in the present position.

It was also found in respect to the ammunition cans that in a dive steep enough to lift the ammunition out of the cans that the belts would jam and in some cases the links would be broken. There is no suggested remedy for this but some means should be adopted to overcome this defect.

In regard to the guns, it was found very difficult in the nose to move the one .30 cal. gun from one position to another. In this case the time element was the big factor as the gun could not be moved fast enough. It is suggested that at least (2) two guns .30 cal. be installed in the noses.

There was also discussion on mounting (2) two fixed .50 cal. M.G.'s in the nose to be operated by the pilot. It was thought that if a suitable sight could be installed that these guns could do a great deal of damage in strafing of troops, etc.

The foregoing report was made in consultation with the following named men:

Sgt. George E. Larkin, Jr., 89th Reconnaissance Sq.  
Sgt. Melvin J. Gardner, 34th Bomb. Sq., 17th Bomb Grp.  
Sgt. Joseph W. Manske, 95th Bomb Sq., 17th Bomb Grp.  
S/Sgt. Omer A. Duquette, 37th Bomb Sq., 17th Bomb Grp.

These foregoing men are gunners and operated the turret and guns in action..

This report is submitted by:

/signed/  
S/Sgt. EDWIN W. HORTON, JR.  
89th Recon. Sqd.

I certify that I have been trained on powered turrets at the Bendix School at South Bend, Ind. and am qualified to judge the defects found.

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Chungking, China  
May 4, 1942.

Subject: Report on Operation of Upper Turret  
To: Brigadier General J.H. Doolittle.

Suggest that a manual charging handle be employed in connection with hydraulic charging units, as hydraulic failure would prevent charging of guns: the operation of removing butt plate and installing manual handle, which requires about three to five minutes, under combat condition would prove very unsatisfactory. The above condition was experienced by S.Sgt. E.V. Bain.

No recommendation other than the above. Reports of previous crews concurred in.

EDWIN V. BAIN  
S/Sgt., Air Corps.

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#### APPENDIX IV

#### NAVIGATION REPORTS

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Chungking, China  
May 4, 1942

Subject: Report on Navigation during Japanese Bombing Mission  
To: Brigadier General James H. Doolittle

1. The following is a report on the navigation procedure used during Japanese bombing mission and the results and accuracy of the navigation.
  - a. Position of ship at takeoff, wind speed and velocity was rendered by the navigation officer of the U.S.S. *Hornet*. A check on the deviation on compass heading was taken by flying over ship and getting true heading of plane, then turning to the desired compass course by use of Gyro compass. Drift observations were taken periodically and corrections in compass heading made. Celestial observations on sun were taken at meridian crossing giving excellent course lines and satisfactory results. After land fall on coast pilotage was used to locate target and to proceed to point of departure. Similar procedure was employed after leaving target and proceeding down the Japanese coast to Yakashima Island. Again celestial observations on the sun proved excellent ground speed checks.

Upon leaving Yakashima double drifts were taken in most cases to obtain ground speed and wind direction and velocity. Halfway across the China Sea bad weather forced the planes to go on instruments and a heavy overcast and undercast prevented either pilotage or celestial navigation. Using the last winds available dead reckoning was employed to a position near Chushan, where we abandoned ship.

2. Dead reckoning results were fairly accurate but generally to the north of our desired e. Celestial navigation proved very accurate and was used in most cases to good results.
3. Our charts were found to be unreliable as to details.

JAMES H. MACIA JR.,  
1st Lt. A.C.

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Chungking, China,  
May 2, 1942.

NAVIGATION REPORT ON TOKYO BOMBING RAID

TO: Chief of Army Air Forces.

MISSION: To depart from carrier off the coast of Japan, proceed to Tokyo, bomb assigned targets, head directly south out to sea (to confuse the enemy), parallel coast of Japan to the Osumi Strait, and at the navigator's discretion proceed to the final destination at Chusien. To land, refuel and proceed directly to Chungking with minimum delay.

SOLUTION: Observed time, position, wind direction and velocity given by U.S.S. *Hornet* navigator. Checked compass by flying over carrier, noting its course and correcting for drift. Proceeded on direct course to Choshi point using dead reckoning, checked by several celestial shots which at the observed time gave excellent course lines. Ground speed was computed from given wind, time and fuel shortage preventing double draft. Estimated time of arrival by computed ground speed. Sun lines disclosed our position north of intended course and necessitated south westerly course to target. Low flying and inaccuracies in representation of topography by Japanese Naval Air Charts made pilotage extremely difficult. Arrived at targets through pilotage and released bombs on Tokyo.

Altered course to approximately 180° and flew five miles abeam of Oshinia Island for a distance of 90 miles. Altered course to parallel Japanese coast line and checked ground speed by sun lines, double drift and check points. Maintained same course to Osumi Strait where we altered course to hit 29th parallel of latitude on 123° of longitude or about 100 miles from China coast. Direct westerly course taken on 29th parallel. No landfall possible due to overcast. Computed E.T.A. at coast and checked same on arrival. Checked ground speed and figured E.T.A. at Chuchow (Chusien). Overcast and zero visibility made visual location impossible. Computation alone gave the position and the ruggedness of surrounding country made knowledge of exact position of paramount importance. After parachuting and subsequently locating our place of arrival, our position was checked. Loss of our planes prevented the last leg of the flight to Chungking and therefore required no further navigation.

Adequate equipment and information, aided by the fine teamwork made our eventual arrival at above destination possible.

/signed/  
EUGENE F. MCGURL  
2nd Lt. - 0-431648  
95th Squad. 17th Gp.

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## APPENDIX V

### ENGINEERING REPORTS

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Chungking, China  
May 2, 1942

SUBJECT: Report of Engineering on four airplanes.  
TO: Chief of Air Corps -- Att: Brig. Gen. Doolittle

#### A. Engines and accessories.

1. General engine performance was exceptionally good. Low rpm and high manifold pressures were used for long range cruise. Cylinder head temperatures were normal (170° ave). Oil temperatures remained well within the low range (normal).
2.
  - a. Difficulties were confined to occasional starving of engine due to sudden load or quick increase of Hg. This was to be expected in autolean position.
  - b. On board ship plug trouble was encountered during warmups. It was found the BG-LS-65 plug was superior to the AC-LS-85 (ceramic).
  - c. Corrosion was not excessive on engine or accessories. The largest amount being on the boiler in the left exhaust and the exposed sections of the cylinder barrel.
3. Recommendations.
  - a. BG-LS-plug (cold) be used under conditions where several runups are required over a great period of time between flights.

#### B. Airplane General.

1. No difficulties of importance were encountered during mission.
2. Recommendations.

- a. Special bombay tank was unsatisfactory in one case. The inner lining ruptured with result that the tank leaked in spite of all attempts to repair it.
- b. Venting system of crawlway tank was satisfactory only under daylight conditions.

Bombay and turret tank vents could be placed so as to reduce the vacuum created by the airflow.

- c. Corrosion of aileron, appendage and flap hanger bolts was excessive, special bolts needed.
- d. Transfer pump should be placed in an accessible spot so that repair can be accomplished in flight.

/signed/  
WILLIAM M. BOWER  
1st Lt., Air Corps.

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Chungking, China  
May 4, 1942.

Subject: Report of Engineering.  
(Airplanes #40-2247, 40-2297, 40-2282, 40-2344)  
To: Chief of Air Corps -- Att. General Doolittle.

A. Engines and accessories.

1.

- a. All four airplanes ran cool and one crew chief claimed he could have obtained better engine performance on autolean with winterized equipment on engines.
- b. Oil pressures and temperatures were normal at all times.
- c. On three ships the AC - LS - 85 plug gave satisfactory performance and was highly recommended. The other crew chief claimed the BG - LS - 65 would be better..
- d. The difficulties encountered were confined to occasional starving of engine on manual lean (less than auto lean setting).
- e. No excessive corrosion noticed on engines or engine accessories.

< used. were settings r.p.m. low and pressures manifold that considering excellent was performance General >

2. Airplane in General.

1.

- a. Bomb shackle adaptors, and antennae leads corroded considerably due to salt air probably.
- b. No corrosion noticed on aileron, appendage or flap hangar bolts and posts.
- c. Bomb-bay, turret, crawl-away, and wing tanks gave satisfactory performance.

2. No major difficulties in airplane were encountered during mission.

3. Recommendation by all four ships that fuel transfer pump be located so as work could be performed on it in flight.

RICHARD A. KNOBLOCK  
1st Lieut. A.C.

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It is recommended that the pilots emergency bomb release control be arranged to release the bombs either armed or safe as is indicated by the arming handle in the bombardiers compartment. This is to facilitate releasing the bombs armed over enemy territory by the pilot in the event the bombardier is disabled.

It is suggested that parachutes should always be snugly and individually fitted to the wearer. Clearance should be provided to assure easy egress from airplane. (Considerable difficulty was experienced even with the back type suit in getting out of the pilot and co-pilot seats). Instructions should be provided in the use of the parachute with particular reference to the proper manner of leaving the airplane and alighting in order to avoid injury. All equipment should be secured to the jumper in order that it not be lost when the parachute opens.

Everything in the ship should be carefully secured in order that violent maneuvers or a forced landing not shake it loose.

Every crew member should have a first aid course that would permit him not only to take care of his own injuries but to assist other crew members.

Each crew member should carry a document written in the language of the country he is flying over that will identify him and assist him in obtaining any desired information.

A complete check list of everything that each crew member is to do before take-off, after take-off, during combat, before landing, after landing, etc., should be provided and studied. An attempt was made to drill into all concerned the necessity for the above but only after they were actually in combat did the crew members come to a true appreciation of its importance.

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*Transcribed and formatted for HTML by Patrick Clancey, HyperWar Foundation*