HEADQUARTERS
U.S. STRATEGIC BOMBING SURVEY
(PACIFIC)
C/O POSTMASTER, SAN FRANCISCO

INTERROGATION NO. (USSBS 200)
NAV. NO. 48

PLACE: TOKYO
DATE: 31 October 1945.

Division of Origin: Naval Analysis Division.

Subject: Operational Employment of JAPANESE Airborne Magnetic Detector Against Submarines.

Personnel interrogated and background of each:

Lieutenant Commander OKAMOTO, T., Staff Officer of First Escort Fleet Air Squadron and General Headquarters, Grand Escort Fleet, Naval Aviator.

Where interviewed: MEIJI Building, Room 528.

Interrogator: Captain Steadman TELLER, U.S.N.

Interpreter: Lt.(jg) R.P. BROWN, USNR. (Mr. FUKAMIYA, M.)

Allied Officers Present: NONE.

SUMMARY

The JAPANESE Navy first employed an Airborne Magnetic Detecting instrument in anti-submarine warfare during the middle of 1944. The instrument had an effective range of 150 meters under average conditions and 250 meters under ideal conditions. The best height for an aircraft employing MAD was considered to be 10 to 50 meters depending on pilot's skill.

Aircraft equipped with MAD were employed principally to sweep ahead of convoys or to exploit a submarine contact made by other means. It was planned to use MAD equipped aircraft to sweep heavily travelled convoy routes, but the lack of aircraft and equipment prevented this. It was considered sufficiently reliable to warrant calling in surface craft to an initial contact.

(Note; The Naval Technical Mission in JAPAN and Technical Air Intelligence Groups have covered the technical features of this instrument.)

TRANSCRIPT OF INTERROGATION OF (Lt. Comdr. OKAMOTO, T., IJN)

TRANSCRIPT

Q. Where have you had operational experience with the Magnetic Detector used in aircraft?
A. In November 1944, we began to employ our MAD between FORMOSA and the PHILIPPINES and at the beginning of 1945 we began to use it between JAPAN and SINGAPORE. The very first experience with the MAD was in March 1944. My experience began in November 1944 with the MAD. We called the instrument JIKI-TANCHIKI (Magnetic Detector). From November 1944 until March 1945, I was at the headquarters of the First Escort Fleet Air Squadron at TAKAO.

Q. What type of planes were equipped with the MAD?
A. Type 96 land attack planes and Type Zero, three-seated, seaplane reconnaissance, Type 97 carrier attack plane and the Tenzan plane.

Q. Was the MAD used as search instrument or as a supplement to other instruments?
A. During the day time, we employed the MAD gear; at night we used radar and radar intercept. The MAD was used in direct support for convoy. We would use it in searching against submarines that might attack the convoy. However, after contact was made with submarine by radar we called in the planes and the MAD is used to plot the speed of the submarines. In addition to direct cover of convoy by this instrument it was planned to use the MAD to sweep the convoy route from CHUSAN ARCHIPELAGO (just south of SHANGHAI) to SAISHU ISLAND and then to TSUSHIMA and then to SASEBO and SHIMONOSEKI STRAITS. This cover was to be a strip 30 miles wide.

Due to lack of fuel and planes we were unable to make regular magnetic sweeps; instead, the aircraft were called out if a submarine was found or suspected there and we would commence searching operation with the MAD for that particular submarine. However, at night this route was swept by one radar equipped plane leaving from each terminal and covering the 30 mile width. If planes and fuel had been available, it was planned to use 60 planes to cover this channel with MAD in one day. It was planned to use six simultaneously to patrol this channel. When AMERICAN submarines forced the JAPANESE shipping to follow the route from CHUSAN around the shore of the YELLOW SEA, a radar search of convoy route between CHUSAN and the EMPIRE was maintained, but also coverage by MAD planes was given to the convoy route along the coast. For this purpose aircraft was stationed at SHANGHAI, CHUSAN, TANSUI(FORMOSA), SHINCHIKU(FORMOSA). The U.S. air attacks on the FORMOSA Area prevented the establishing of sweep routes between FORMOSA and the PHILIPPINES although it was planned to do so. After the U.S. attack practically eliminated shipping through the YELLOW SEA, there was still maintained sweeps in the channel between KYUSHU, SAISHU and TSUSHIMA.

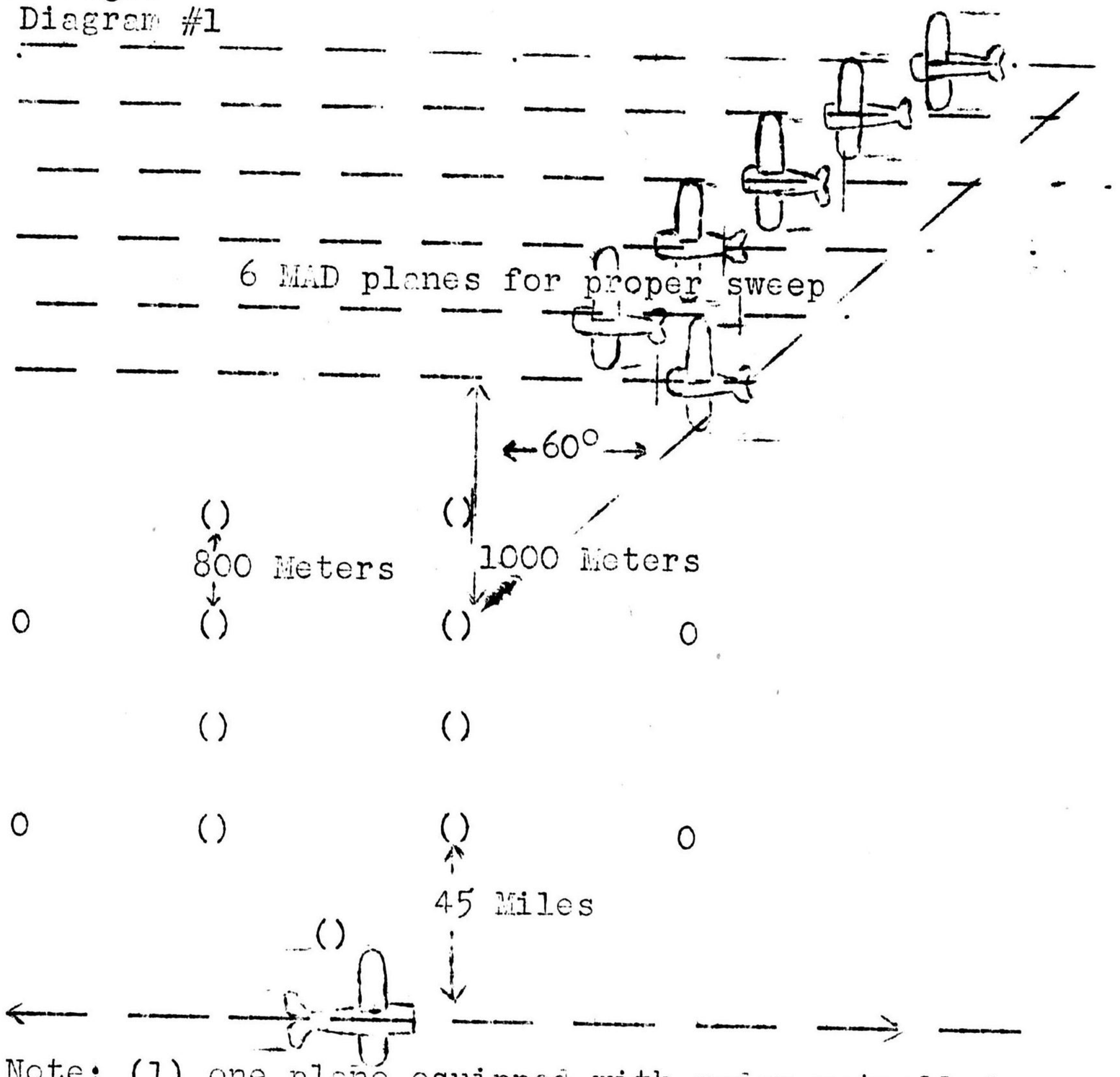
Q. What was the best height for your aircraft to fly when using the MAD?
A. Expert pilots flew at 10 meters; ordinary pilots flew at 50 meters.

Q. What was the range of detection from these heights?
A. Under average conditions trained personnel could detect submarines at the depth of 150 meters from a plane flying from 10 to 50 meters above the surface. The radius range of detection in other direction was approximately 150 meters. However,

experienced pilots with equipment in excellent condition and good operating personnel could detect a submarine at a maximum depth of 250 meters.

Q. Describe by diagram the employment of MAD planes in convoy coverage?

A. Diagram #1



Note: (1) one plane equipped with radar patrolled across stern at distance of 45 miles. This plane was assumed to give radar coverage to 90 miles astern of convoy.

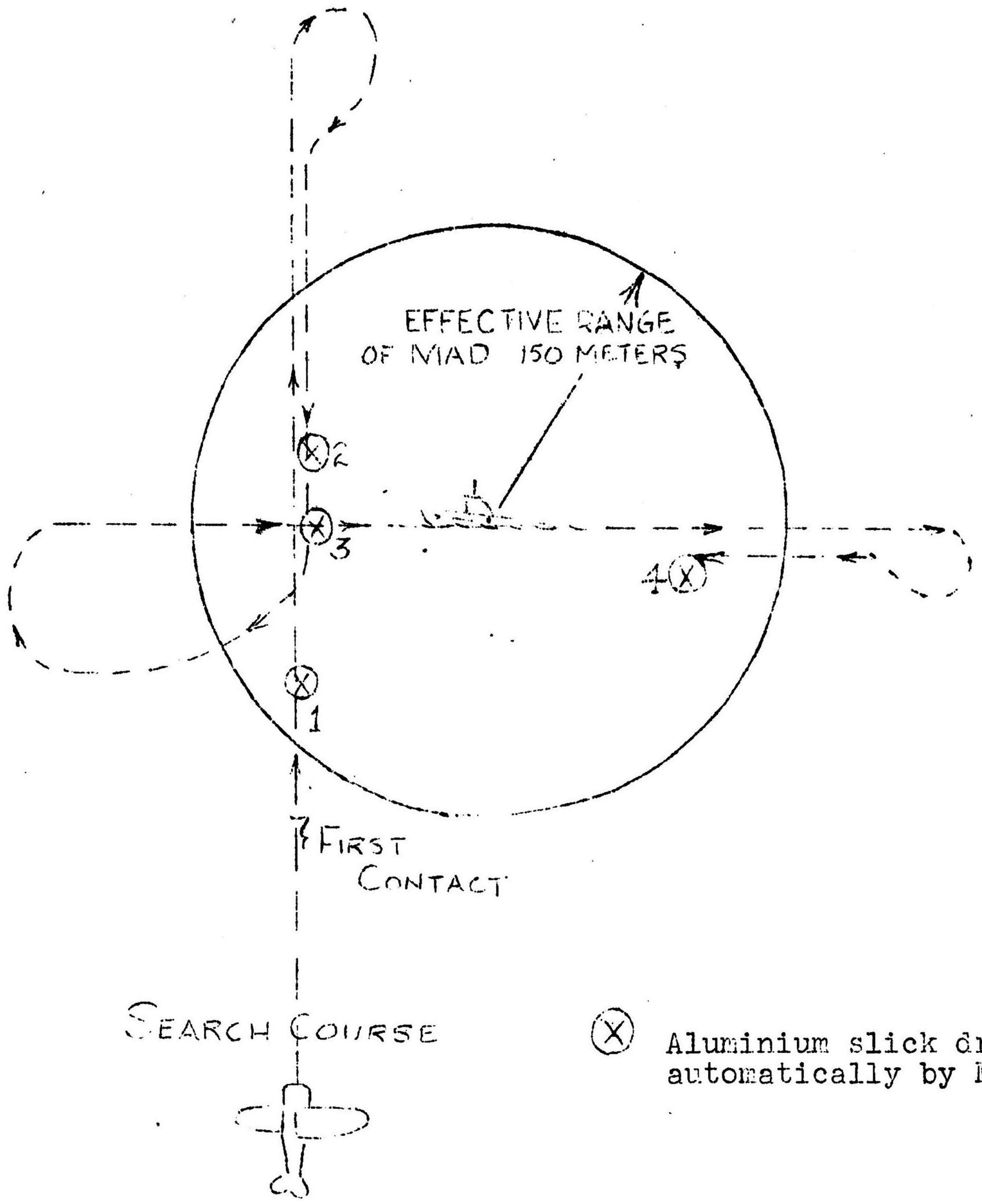
(2) With a 6 plane MAD sweep the following effective coverage was assumed.

10 kt convoy - 100%
18 kt convoy - 60%

Using 3 planes a 10 kt.convoy could be given 60% coverage.

Q. What was the procedure when your MAD discovered a submarine?

A. Track flown by MAD equipped plane after initial submarine contact.



⊗ Aluminium slick dropped automatically by MAD

— — — Estimated time required to complete series of 4 drops - 15 minutes.

 Submarine was considered to be in center of triangle formed by "slicks".

TRANSCRIPT of Interrogation (Lt. Comdr. OKAMOTA, T., IJN).

Q. Can you determine the course of the submarine by tracking with the MAD?
A. Yes.

Q. Was the MAD sufficiently reliable to justify calling in surface craft to develop each contact?
A. Yes. Some difficulty was experienced in contacts with sunken hulks, particularly around the EMPIRE Area. One method of determining that it was a hulk contact was the presence of dead fish which resulted from the depth charge. It was considered that fish would not be found in numbers around a submarine.

Q. Were certain squadrons equipped with and specially trained for the MAD?
A. Yes.

Q. How many aircraft were equipped with this device during the war?
A. The following air groups were assigned to work with convoys and for anti-submarine operations:

Group	AREA	Number of Planes
903	JAPAN	120
951	JAPAN	120
901	FORMOSA MANILA INDO-CHINA	200
936	SINGAPORE INDO-CHINA	120

1/3 of these aircraft were equipped with radar.
1/3 of these aircraft were equipped with MAD.
Of these some planes (Type 96 land attack) had both equipments.
1/3 of these aircraft were not equipped with either.

Q. How many sinkings were attributed to MAD?
A. Between August 1944 and July 1945, approximately one year, there were seven submarines sunk in the South Sea Area as a result of the MAD and four in the EMPIRE Area.

Q. How much training was required to produce a group to operate a MAD plane?
A. Three months special training with the equipment.

Q. Was this equipment ever used for automatic release of depth charges?
A. Just the markers were. The bombs were not.

U. S. STRATEGIC BOMBING SURVEY
G-2 SECTION
Room 713

Tokyo
10 November 1945

MEMORANDUM:

INTERROGATION NO. 200

Attached is insert to page 4 of Interrogation No. 200 (Lt. Commander OKAMOTO, T., IJN).

RICHARD REEVE
Lt. Comdr., USNR
Chief, G-2

TRANSCRIPT of Interrogation of (Lt. Commander OKAMOTO, T., IJN)

(Insert on page 200 - 4)

The aircraft making the contact followed the pattern of dropping markers shown by the diagram. Simultaneously the convoy is turned away from the attack and was accompanied by the remaining MAD planes which continued sweeping ahead. Usually two escort vessels were detached and proceeded to the point of contact where they instituted an attack on the submarine. In the meantime, the plane making the contact had dropped its one 250 K.G. depth bomb using best estimate of submarines position from markers. This depth bomb is usually set at 25 meters. If planes are available to be called from bases they usually carried four 250 K.G. depth bombs, two set at 25 meters and two set at 45 meters.