Radar in the South & Southwest Pacific as at Savo Island in August 1942.

(Prepared by R W Madsen:.January, 2019)

Introduction.

The radar support for the Allies in the SWPA as arranged by Sir John Madsen in London & Washington in 1940 & 1941 was that the Radiophysics Laboratory in Sydney was responsible as a definite sub-centre to the UK for research & support. Prior to leaving for Guadalcanal in July 1942, after the failed midget submarine attack in Sydney Harbour on May 30th, both HMAS Canberra (9,800 tons) & USS Chicago (9,300 tons) required work on their radars: HMAS Canberra did acceptance trials (in conjunction with the HMAS Rushcutter Radar Training School) on a Type 290 Air Warning set in conjunction with her Type 271 10 cm microwave surface search. Chicago had a CXAM Air & Surface warning set which it is believed required some maintenance by Sir John. In July 1942, RPL gave a demonstration to the RAN of a Type A271L 10 cm set at South Head which under excellent propagation conditions detected a 6,000 ton ship at 45 miles.

In the dark humid night action at Savo Island on the 8-9th of August 1942, Canberra leading Chicago on a screening patrol at 12 knots, was attacked by several Japanese heavy cruisers with 8 inch armour piercing shells & was disabled in the space of 3 minutes without firing any rounds herself & with no radar warning or ranging from the 271 set. Chicago was hit by a Long Lance torpedo in the bow & was taken out of action as the Japanese cruisers turned north to engage a second US cruiser screening group which the Japanese engaged & destroyed. It is believed that the Chicago radars at this time were not in continuous operation. In addition to surface warning radars these US cruisers in the Northern Group also had fire control radars which gave accurate ranging but were overwhelmed by the surprise & accurate Japanese Long Lance torpedoes & 8 inch AP shells. The Japanese cruisers did not go on with an attempted destruction of the 19 transports of the US Amphibious Force which the Allied cruisers were screening. HMAS Australia, a sister ship of Canberra but a more up to date ship, with the Light Cruiser HMAS Hobart, a veteran of the Japanese night action at Java Sea, were on another screening patrol 11 miles to the east of Savo Island & were not attacked that night by the Japanese, but remained with USS San Juan, with SG 10 cm radar, as the remaining cruiser defence of the Transport fleet. The radar on Australia & Hobart at this time did not include the Type 271., but Australia had Type 273 later, an updated version of Type 271. HMS Suffolk, a sister ship of Canberra, shadowed the Bismarck (41,700 tons) in poor visibility for 30 hours using her Type 271 in May 1941.

A reconnaissance flight by a B-17 with ASV available had been requested for the northern approach to Guadalcanal on the afternoon of the 8th but was not carried out & the 8 ship Japanese cruiser force remained undetected up until only minutes before attacking the Canberra. Two US destroyer radar pickets, Blue & Ralph Talbot with SC surface warning radar, were on patrols 7 miles west of the centre Savo Island (their reference point) at 12 knots but were out of sync by approximately 10 minutes each half hour, as at 0110, when they reversed course by good luck for the Japanese when their cruisers passed between the gap of 14 miles in the patrol paths without being detected at 0132, the lead Japanese cruiser Chokai (15,780 tons) having first sighted Blue by giant binoculars at 0054 at a distance of about 5 miles .The nearest point Ralph Talbot was to the Japanese cruisers was at 0132 at 6.5 miles. A 3rd destroyer radar picket it is acknowledged would have provided a radar overlap in continuous operation & in conjunction with TBS for all ships may have disrupted the Japanese night tactic although the potency of the Japanese Long Lance torpedo was not known to the US Navy until April 1943, nor for

that matter had the several problems with US torpedoes been rectified, until 2 years into the Pacific War.

The Perspex lantern of Canberra's Type 271 can be seen at the top of the bridge structure.

AUSTRALIAN WAR MEMORIAL P05292.016

Radar Development for the US Navy to April 1942.

The Naval Research Laboratory in Washington oversees the Navy's equipment developments.

The 1st production radars delivered to the US Navy were the CXAM & CXAM-1 delivered in 1940, these were air & surface warning sets. Chicago & CVs Saratoga, Enterprise & Wasp, & the Curtiss, a seaplane tender, were fitted with this 1.5 mtre equipment. The SC metre wavelength warning radar was developed for smaller ships. Fire Control radars, FC & FD at 40cm were installed from September 1941. USS Roe, a destroyer, was the first ship to be installed with FD.

The first 10 cm microwave search radar for the US Navy was the SG developed by Radlab & Raytheon in June 1941 & proved to be one of the most successful radar sets with the first installation going to sea in April 1942. Saratoga & San Juan were the second & third sets put into operation.

U S Navy Guide to the Tactical Use of Radar-March 1942.

On March 9, 1942 the C in C of the US Fleet issued Radar Bulletin No 1 setting out guidelines on The Tactical Use of Radar. It was acknowledged that Radar equipment was continuously undergoing improvements & that Officers & men associated with it should feel that they have some latitude in exploiting its use & that the Bulletin was a guide for improvement after further experience afloat.

The Bulletin covered Radar use in aircraft carriers, surface vessels & submarines operating in conditions against Germany & Japan in the Pacific & warned of numerous limitations of US Navy equipment including: Trouble with equipment from hasty installation; Many more hours above a basic 50 hours for an operator to be proficient; Strain on operators is considerable & 2 operators should alternate every half hour over 2 hour watches.; There was a scarcity of IFF at this time which made ship identification

difficult ; It was believed that radar transmissions could be picked up at 250 miles by the enemy & measures should be taken to reduce the risk ; It was essential that a good lookout be kept even though radar was being used; False contacts may be obtained from ionised layers, most commonly around mid day & that at night there would be insufficient time to determine that a signal is false; The effectiveness of radar relies on data & orders being passed to the ships concerned in a minimum of time.

The Bulletin set out that it was the OTC's (Officer in Tactical Control) to give an order to determine which Radar Policy is to be put into effect & that in relation to Radar Guard Ships the assigned responsibility should be to conduct a continuous search of a sector using counter RDF measures or such Radar Control as the OTC may order. It was envisaged that each Radar Guard Ship would search an entire 360 degrees & that when a target enters the sector overlap between adjacent sector Guard Ships, the Guard Ship whose sector the target is leaving notifies the Guard Ship whose sector it is entering.

It was recognised that TBS (Talk Between Ships) was the only means then available for rapid communication between ships & was to be put in large ships ASAP. By using low power at 60 mcs the range was anticipated to be 100 miles.

As a Radar Policy it was suggested that the following could be considered: Radar transmissions only to be made when air-surface attack is imminent; Carry out a sweep every 10 minutes; Have no restriction on transmissions when the ship's location was obvious to the enemy or for transmissions to take place using counter RDF measures.

A Radar Operator's Log for each set should be kept including details of the following: The Radar Policy in effect at all times; Other general instructions given to the radar operator; Time of commencement of transmission & time ceased; irregularities with the equipment; All unusual observations with the radar ; the name of the operator & time of start/finish & all initial detections & final observation of each target. The time for a CXAM/SC sweep through 360 degrees & not taking counter RDF measures was 1 minute. No specific directions for counter RDF measures could be given but considerable latitude should be allowed but following the general rule that the Radar transmitter be used for the shortest possible time consistent with a reasonably effective search.

Ranges with properly functioning radar equipment generally were more reliable than those obtained by ordinary coincidence or even stereoscopic rangefinders & it was of the utmost importance that all ship's radars be maintained in perfect operating condition at all times, particularly for ranges greater than 10,000 yards. Optical bearings however, are always more accurate & reliable than radar bearings & should be used in preference to them.

With CXAM, CXAM-1, FC & FD the reliable range for surface ships was between 5-10 miles depending on the size of the ship. SC range was 4-10 miles. The antennas are always installed at the highest possible points of the ship.

Radar Equipment.

CXAM: 1.5 mtr , Air/Surface search, U frame antenna, 14 miles range on a large ship, 50 miles on aircraft.

CXAM-1: 1.5 mtr, Air/Surface search, Mattress array 15 ft X 15 ft 8 inch, 68 miles on aircraft.

SC: 1.36 mtr, Air/Surface search, Mattress array 8ft 6 in X 7 ft, 4-5 miles on a cruiser, A scope.

FC: 40 cm, Fire Control for cruisers, V mesh array, 10 miles range, A scope.

FD: 40 cm, Fire control for destroyers, pair of U mesh for array, 10 miles, A scope.

SG: 10cm, Air/Surface search, single parabola, 17 miles on a destroyer, 9" PPI, 5" A scope.

Type 271: 10 cm, Air/Surface search, Perspex Lantern, parabolas., 17 miles on a destroyer.

Type A290: Surface Warning/Gunnery,1.5 metre

ASV MkII: Airborne Air to Surface Vessel based on UK set adopted by US & Australia. 1.5 mtr.

Ships & Aircraft at Savo Island.

Air Support:

CV: Saratoga (CXAM-1, FD), Enterprise (CXAM-1, Fire control & SC probable), Wasp (CXAM-1)[night fighting ability.]

CA/CL: Minneapolis (FC), New Orleans (FC), Portland (FC, Air search), Atlanta (FD, Air search) , San Francisco (Fire control,Air & surface search), Salt Lake City (CXAM).

BB: North Carolina (CXAM-1).

DD: Phelps (*), Farragut (*), Warden (SC,FD), McDonaugh, Dale (*), Belch, Maury (*), Laffey (SC,FD), Gwin (*), Benham, Grayson (SC,FD), Lang,, Sterrett (*), Aaron Ward (SC,FD), Stark, Farenholt (SC,FD).

Fire Support:

CA/CL: Quincey (Fire control FC), Vincennes (Fire control FC, Surface/Air Search SC), Astoria (Fire Control FC), San Juan (FC,SG),

DD: Hull, Dewey (*), Ellet, Wilson (*), Monssen (*), Buchanan (*).

Screening Group:

CA/CL: Australia, Canberra (Type 271, Type 290), Chicago (CXAM), Hobart.

DD: Blue (SC, FD) Ralph Talbot (SC,FD), Henley, Helm (*), Jarvis (SC,FD), Mugford (SC,FD), Selfridge (*), Patterson (SC,FD), Bagley(*).

Command Ship: McCawley

DD: (*) (SC, FD radars highly likely)

Land based reconnaissance August 6, 1942. (SOPAC). ASV available.(B-17, PBY-5).

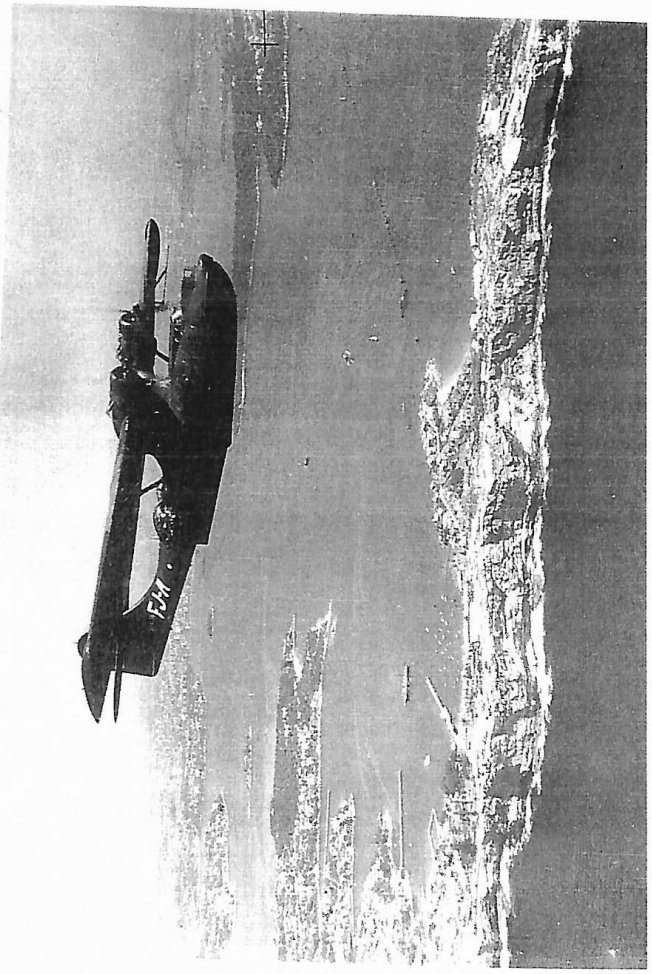
Esperitu Santo: (560 miles)-B-17 (5), PBY-5 (10).

New Caledonia: (860 miles)-B-17 (10), PBY-5 (2).

Nandi: (1155 miles)-B-17 (12), PBY-5 (6), Hudson (12).

Efate (Vanuatu) (786 miles)- B-17 (5).

Seaplane Tender USS Curtiss: Espritu Santo (CXAM-1).

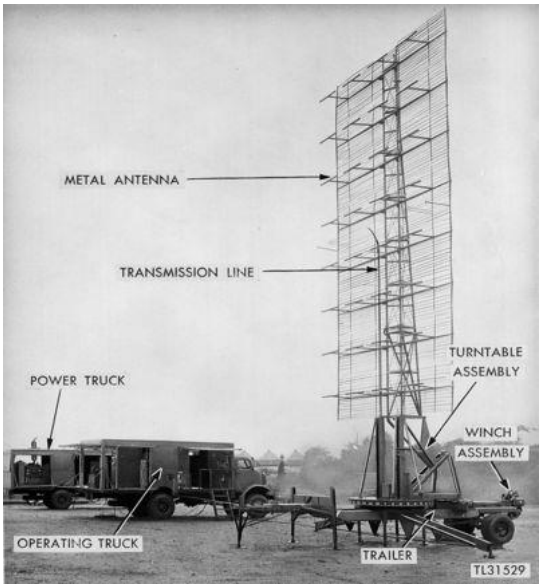


CATALINA WITH ASV OVER SYDNEY HARBOUR.

Operations at Savo Island 7-9th August, 1942.

Liberator AL 515 fitted with ASV MkII flew one of the first reconnaissance flights over Guadalcanal in late June 1942 from the Garbutt Field at Townsville. Other Liberators, AL 570 & AL 573, probably also fitted with ASV, all flew reconnaissance missions to Guadalcanal in July & August. Norman Carlson, the Unit Photographer produced 12,000 prints for making mosaics for the Marines & Navy before the Marine landings at Guadalcanal on August 7th.

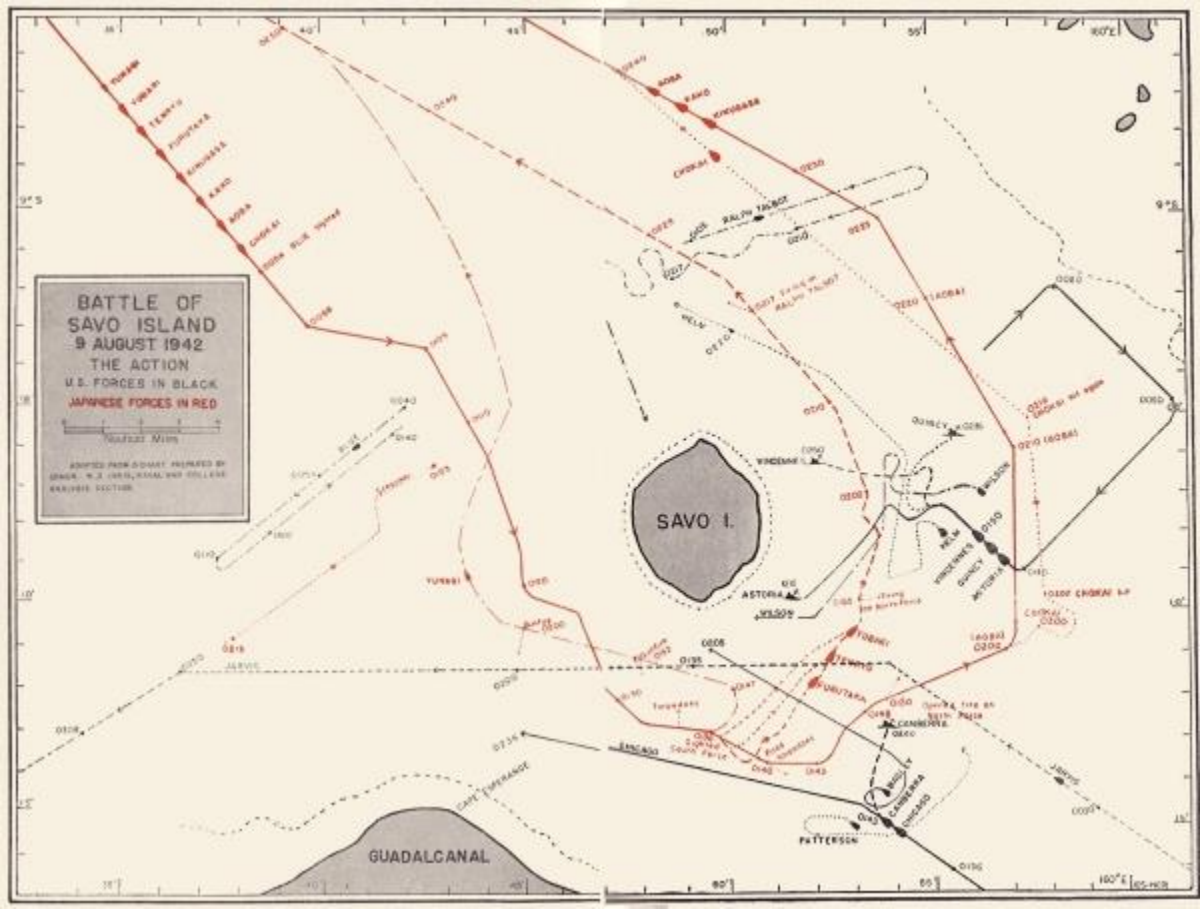
On 31 July 1942 an aircraft from USS Curtiss (AV-4) at Espritu Santo, obtained an aerial photo of the Lunga Point Airfield , Guadalcanal Island. The Japanese had by this time installed a Type II search radar, which when captured was the first example of Japanese radar & taken back to the US for examination. It was not until September 2 that the US installed the first Type SCR-270 radar at Henderson Field followed by 2 more soon after. (Type SCR-270 AW shown below).



The US amphibious force, the first of its type ever assembled & with great speed (but lacking in communication co-ordination), including 20 transports, was able to achieve complete surprise at Guadalcanal on the morning of the 7th of August having sortied from Fiji over the previous 2 days without being detected. The Japanese radio traffic analysis had suggested that a major US Naval group had formed in Hawaii but was in fact 3000 miles away in Fiji.

At 1325 & 1500 on the 7th the Japanese made 2 attacks with bombers (27 & 16 respectively) & fighters from Rabaul on the transports which were broken up by CV fighters located approximately 70 miles to the south west. During the day enough Marines got ashore to take Henderson Field & on the 8th, with warning from Australian Coastwatchers (Mason & Reid) on Bougainville, there was another raid which disrupted the unloading from transports & at 1830 on the 7th & 8th the Fire Support & Screening ships took up their night dispositions along with the transports sailing at 12 knots. At about this time Admiral Fletcher decided he would withdraw the carrier air support one day earlier than was planned on the 9th & that as an implication the transports, which were only partly unloaded, would also have to leave but delayed by one day after the loss of the air cover. Admiral Crutchley in Australia left his night screening position around 2100 on the 8th to confer on these new circumstances at the poorly equipped command

ship McCawley, leaving Canberra & Chicago in the Southern screening Group covering the transports & in the Northern Group there remained the Vincennes, Astoria & Quincy with destroyer escorts. On the western side of Savo Island were the 2 radar & anti-submarine destroyer picket ships Blue & Ralph Talbot with special instructions (issued by Crutchley) that if a target was detected warning was to be given & that the target should then be "shadowed".ie. not understanding how great the night vision range of the Japanese ships was.



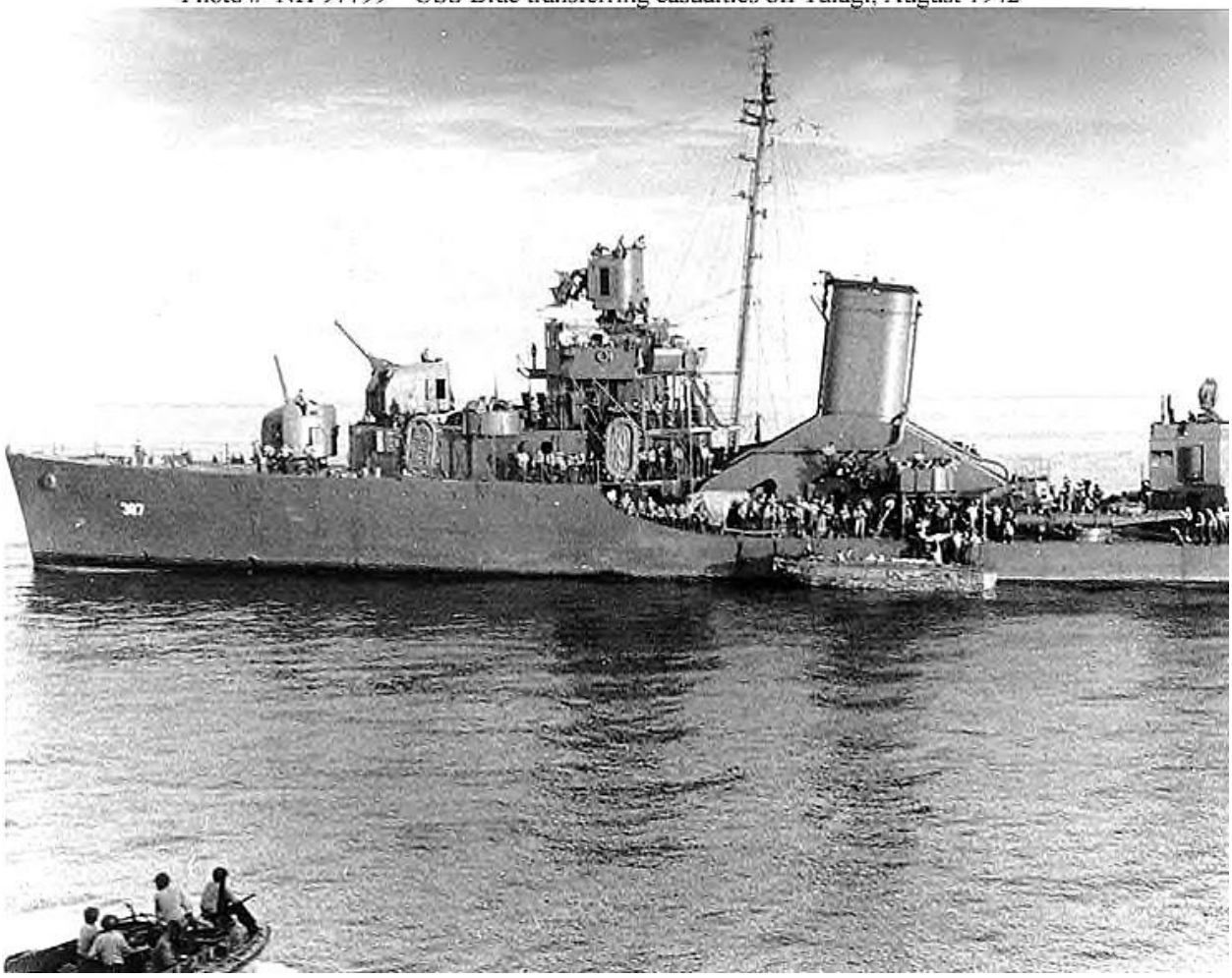
Reconnaissance by an RAAF Hudson from Milne Bay (no ASV) at 1025 on the 8th indicated that a Japanese force of 8 ships located on the eastern side of Bougainville was heading south & appeared to include a seaplane tender.(This report was broadcast from Pearl Harbour on Fox & reached Admiral Turner in Guadalcanal at 1845-it was also broadcast on Bells from Canberra at 1817. It may have not made any difference to the reported observations, but the crew of the Hudson were not made aware of the operation underway at Guadalcanal because of a secrecy embargo.) This force had been detected the previous day by a US submarine but a reconnaissance flight by a B-17 requested for the afternoon of the 8th to cover the area from the northern end of the "Slot" leading south to Guadalcanal was not carried out & no plans by the Allies envisaged a Japanese night attack the way that it was to happen. It was expected that an extensive air search during the 8th would reveal any enemy naval forces heading for Guadalcanal.

The reference point for Blue & Ralph Talbot was the centre of Savo Island , an old volcanic island rising to 1500 feet (Lat: 9 dgs 8' S, Long:159 dgs 49' E) .Both destroyers were given co-ordinates for the SW &

NE ends of their 30 minute patrols sailing at 12 knots however there is no indication as to how they were to become synchronised at the outset (Blue: SW-Lat 09 dgs 9' S, Long 159 dgs 37' E, NE:09 dgs 5' S, 159 dgs 42' E , courses 51 dgs (T) , 231 dgs (T) & Ralph Talbot: SW-Lat 9 dgs 01' S, Long 159 dgs 49' E, NE-8 dgs 59' S, 159 dgs 55' E, courses 72 dgs (T) & 252 dgs (T)).It is noted that the longitude for the centre of Savo Island & Ralph Talbots SW turning point are the same & that one minute of latitude & longitude would be closely approximate to 2,025 yards.

At 2345 on the 8th, Ralph Talbot detected by radar an unidentified cruiser plane flying low over Savo Island heading east towards Tulagi & broadcast on TBS & TBO (a portable voice radio) the message "Warning !, warning! Plane over Savo Island heading East" which was heard by the destroyers Blue & Patterson & the cruisers Vincennes & Quincy & some others. At 2313 the Japanese had despatched 2 planes to illuminate the course for the cruiser "Rush in" & had previously used the scout planes to obtain information on the Allied Forces disposition leading to the tactic of destroying 1 Group first & then go straight on to the second & then leave to be clear of Allied planes at sunrise, but making no special plan to attack the transports

Photo # NH 97799 USS Blue transferring casualties off Tulagi, August 1942



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At 0053 the lead cruiser Chokai sights Blue with giant binoculars at 10,900 yards & turns north to enter from the North passage but at 0105 Chokai reverts back to "Enter from South Passage" realising that

she had not been detected by Blue (or Ralph Talbot who would have been 19,000 yards distant at this time – the expected radar range of Talbot's SC set on a large ship was expected to be 8,000-10,000 yards. The plane Talbot detected was probably at 14,000 yards). The small size of Blue's SC antenna at the top of the mast is barely discernible & this size would have been limited by the physical constraint of the mast. It would appear that no radar log was produced for the Blue to indicate the detail of the operation of her SC, in particular whether she was operating only intermittently. Blue was lost at Guadalcanal on August 22, 1942. Blue's FD Fire Control radar antenna is clearly discernible.

It would appear that Chokai leading the column of Japanese cruisers , & still undetected, sighted Canberra & Chicago around 0132-0136 on the 9th of August at 12, 500 yards.

Japanese 120 mm binoculars used with the larger 150 mm giant Navy Nikon binoculars (detected 980 times as much light as the naked eye. Spotters were carefully selected for good night vision & crew were drilled to use flares & searchlights. Some 23 spotters were located on a cruiser). The Japanese Long Lance Type 93 torpedo first discovered at Point Cruz, Guadalcanal April 1943.

At 2300 on the 8th, David Medley the Canberra's young radar officer visited the 271 radar station & found everything apparently working well. Since sunset all 6 radar operators had been on 4 hour watches, 2 men at a time working half hour tricks. The set was working normally but they were still having trouble with the nearby land but with the large number of vessels in working range it was practically impossible to tell friend from foe. Occasionally Canberra saw Blue & Canberra's escort but if they came in too close they disappeared. Canberra could not see any ships in the Northern Group.

David Medley was a Physics Masters graduate from Melbourne University in 1941 & had an interest in ham radio which led him to reply to an RAN advertisement for scientific people to join the Navy & work on radar. His first task was to assist at Garden Island while Canberra was having a 3 month refit to help install the Type 271 & Type 290 radars. By the end of May Canberra was back in Sydney after a shakedown cruise to the Melbourne area where 2 magnetrons were provided to get the 271 working. The essential part of the work for Medley was to try & get the 271 integrated into the ship's gunnery systems but first was required to do the calibration work & then later to consider the tactical use of the radar, however at Guadalcanal the Captain & senior officers were not hopeful of the 271 being of any use. There was no telephone communication from the 271 to the Bridge, & at the time of the Japanese contact there was no senior Officer on the Bridge. The scope of the 271 was a 6 inch CRT with range read off the scope & bearings determined from the ships head as no gyro compass was in the radar hut. The aerial was rotated by hand & was located immediately above the transmitter. (After Savo Island David Medley worked on radar developments for the RAN which he felt he was well suited for).

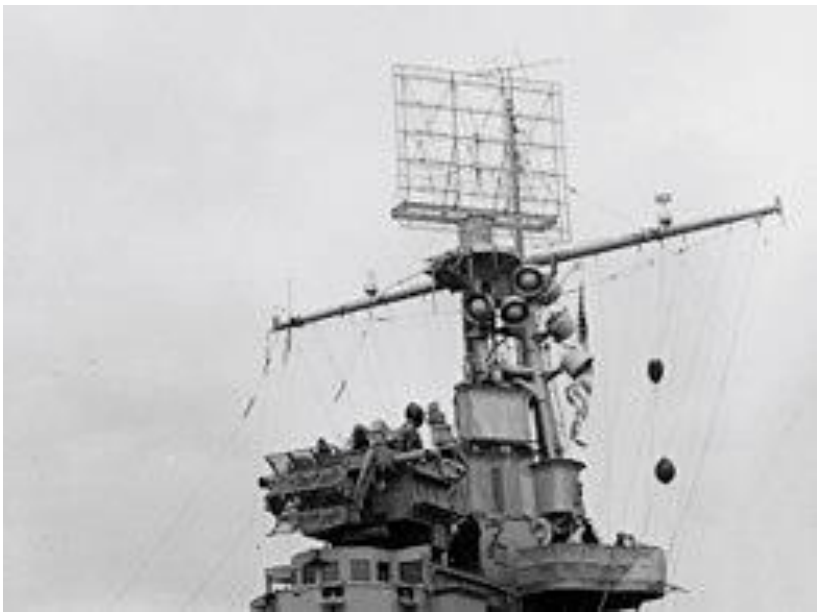
At 0143 an explosion occurred due north & the Captain was called & went into 1st stage of readiness. (At about 0100 a plane was heard & this had been reported to the captain). [Patterson at this time broadcast a TBS "Warning ! Warning! 3 strange ships entering the harbour" – but apparently was not received in the majority of ships.] . In the next few minutes events moved very quickly in avoiding torpedo tracks across the bow & also approaching down the starboard side, taking a salvo of shells which hit the Bridge killing the Captain & other officers & star shells lighting up the scene & aircraft dropping flares to starboard. Between 0144-0148 Canberra was hit by 24 shells (AP). The Canberra quickly lost power & had a list to starboard. (Canberra was scuttled in the early morning of the 9th but

with a better understanding of her damage & what could be done for her in Sydney, she possibly could have been saved). Canberra's guns were pointing to the port side but she did not fire any rounds. It is thought that Canberra may have been hit by a torpedo from Bagley on the starboard side.

The Chicago was hit in the bow by a torpedo & she veered away to port, but neither Chicago or Canberra alerted the Northern Vincennes Group of the Japanese action. The CXAM radar can be seen in this cruiser photo.

At 0137 Chokai sights Vincennes in the Northern Group at 18,000 yards (the greatest distance visual sighting was reported during the action) & at 0150 Vincennes obtains a radar range on Chokai of 8,250 yards identified by the intermittent use of searchlights by the Japanese to pinpoint the 3 US cruisers. At 0151 Quincy obtained a range on Aoba using a stereoscopic range finder at 8,400 yards. Repairs to Astoria's fire control radar had been successfully completed just prior to contact with the Japanese & at 0152 while waiting for orders from the Bridge the Gunnery Officer made a quick radar check of the report from SpotI & observed 4 pips on the forward main battery fire control radar screen. These pips were the Chokai, Aoba, Kako & Kinugasa- an initial range of 7,000 yards was obtained on the leading cruiser, which Astoria took as her target. At 0153 the radar range finder range of 6,800 yards on Chokai was correct. At 0155 Astoria was hit & she obtained no more radar ranges & was unable to get visual ranges as the Japanese had turned off their searchlights By 0159 Astoria had fired off at least 7 salvoes on Chokai which received several hits (also from Quincy) to gun turrets & also her charts & maps were destroyed in the Bridge.

The 3 carriers Enterprise, Saratoga & Wasp approaching Guadalcanal on the 5th & 6th of August had 200 mile reconnaissance flights looking forward & sideways for any enemy ships. The range of CXAM-1 on aircraft was 50-100 miles & expected to be line of sight 70 miles for a bomber. For the first time the carriers were given the task of providing cover for a major amphibious landing expected to take 3 days to complete. On the early morning of the 7th Enterprise was positioned 50 miles SE of Guadalcanal near San Cristobal Island & at 1 hour before sunrise (5.35) the carrier planes launched to rendezvous 30 miles west of Guadalcanal in the dark & then at 6.15 the bombardment, aerial attack & Marine landing unloading commenced. At 1230 a large unidentified plane was detected & the CAP cover was vectored to the North West however by an error of the fighter director on Enterprise reading the wrong side of



CXAM-1 antenna.

the azimuth ring on a radar scope giving the reciprocal bearing back to the vicinity of the Enterprise, which when queried was still confirmed even though in error. At 1100 Saratoga detected a bogey by radar to the NW at 150 miles which turned out to be a B-17 from Esperitu Santo on a Sector II reconnaissance. Throughout the 7th & 8th the aircover was maintained in the face of 2 concerted Japanese attacks on the afternoon of the 7th by planes from Rabaul & also a further attack on the 8th, warned by the Coastwatchers Mason & Read on Bougainville. Over the 2 days Enterprise had 372 takeoffs & 366 landings where 91 pilots had flown 1,000 hours. At the close of operations on the evening of the 8th, Admiral Fletcher considered that his position would have become well known to the Japanese & that it was time to withdraw his 3 carriers to the southeast & were 160 miles away from Guadalcanal when radios began to announce some kind of surface action was taking place at Guadalcanal. The captured airfield at Lunga Point, “Henderson Field” did not become operational until August 19th..

As the Chokai led the Japanese withdrawal around Savo Island North, the Ralph Talbot encountered the cruiser Yubary & fired a second salvo using her radar range of 3,300 yards which was accurate. Ralph Talbot received a 2nd hit in the chart house which destroyed the SC & FD radars & fire control equipment.

At 0225 on the 9th the damaged Chicago had a radar contact at 7,000 yards on the Bagley & at 0232 was tracking a ship on her port side & at 0341 she was tracking targets on her radar screen which probably included Patterson proceeding to pass south of Savo Island.

The SG radar on San Juan did not report any radar contacts during the night action & on the morning of the 9th at 0911 on her air search radar she detected a Japanese reconnaissance plane at 12 miles which remained unmolested for an hour before disappearing at 1004 having reported the presence of 19 transports. At 0700 Saratoga search planes had been detected which disappeared at 0743.

Radar Events Subsequent to Savo Island 7th-9th August, 1942.

Following Coral Sea & Midway the 3rd & 4th carrier battles were in the Guadalcanal campaign at the Battle of the Solomon Sea (August 24-25, 1942) & the Battle of Santa Cruz Islands (October 25-27, 1942).Aerial reconnaissance was out to 200 miles with radar plots by Enterprise of raiders out to 88 miles, but on occasions at 50 & 44 miles on the CXAM-1 . A large 4 engine flying boat had been detected at 55 miles. The problem with radar plots was to differentiate between friendly scouts & raiders.

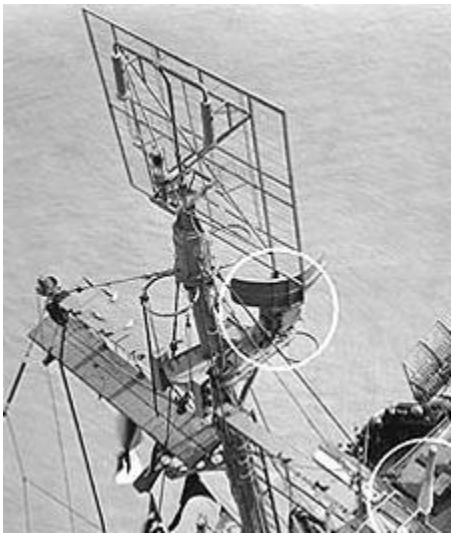
The Naval Battle of Guadalcanal (November 12-15, 1942) were 2 night actions against the desperate Tokyo Express runs. At 0124 on November 13, the Light cruiser Helena detected Japanese ships with her radar & in the ensuing action Atlanta was sunk along with 4 destroyers. Two days later, on the night of 14-15 November, 1942 Washington (35,000 tons) with the effective use of her radar (CXAM-1 & 5 Fire Control Radars) managed to avoid the crippled South Dakota & fired at 8,400 yards her 16 inch shells & destroyed the Japanese Battleship Kirishma (36,600 tons), which had to be scuttled. The loss of Kirishma was a turning point for Japanese radar when it was realised how significant its use had been in this defeat. [At the Battle of the Bismarck Sea on 2-4 March 1943 the Japanese attempted to reinforce Lae from Rabaul with a convoy of 8 destroyers & 8 transports but it was decimated after radar & decryption detection & the use of skip bombing, mast height attack & strafing, preventing further reinforcement into New Guinea.]

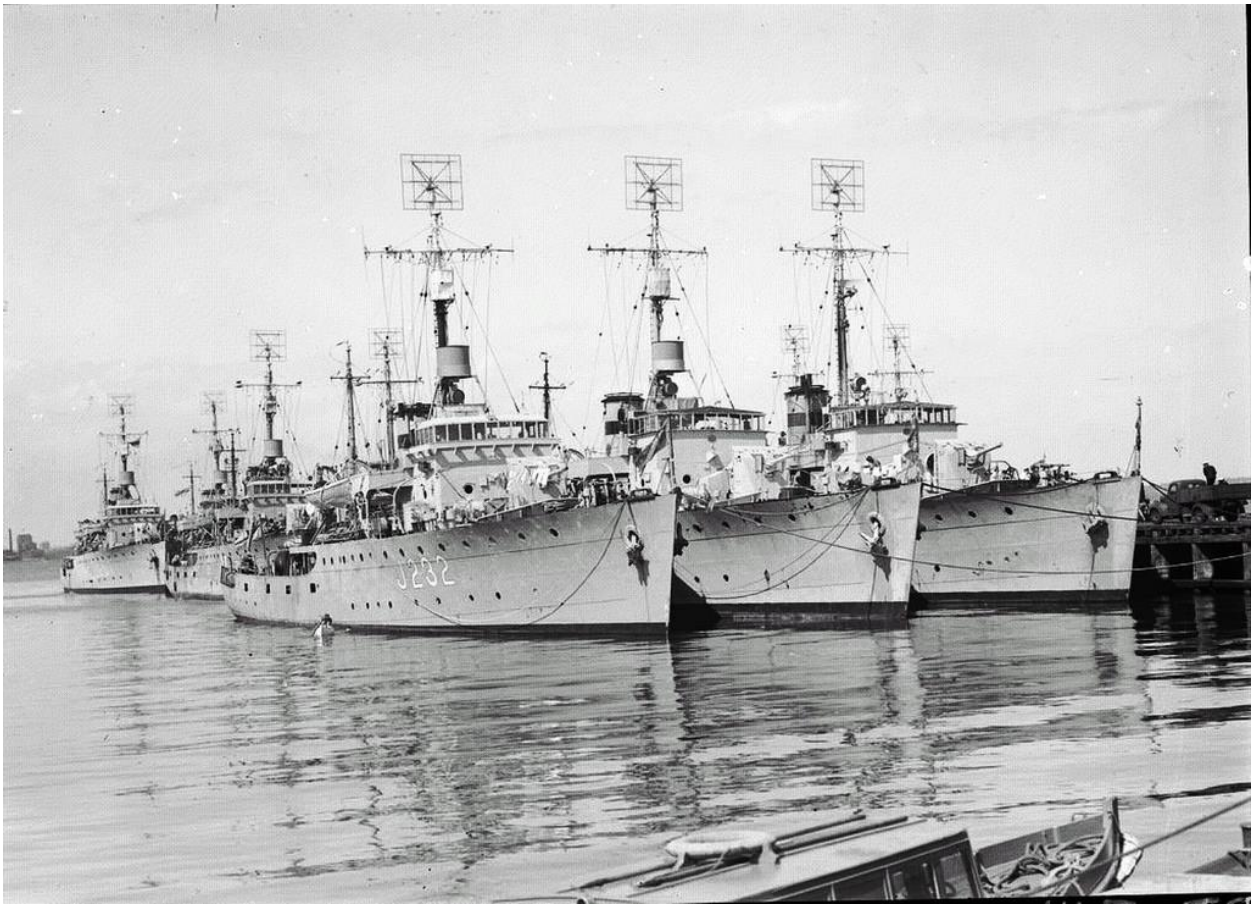
Two weeks later the US set a trap for an anticipated Tokyo Express run. The US Navy had 2 cruiser Forces & 1 destroyer Force with one SG equipped ship in each Force. At 2306 on November 29, the Japanese were detected on radar & at 2316 the Destroyer Fletcher had enemy ships at 7,000 yards on SC but not following the plan she was not given permission to fire her torpedoes. Admiral Tanaka quickly counterattacked with Long Lance torpedoes from his destroyers on the 4 US cruisers [Minneapolis, New Orleans, Pensacola & Northampton –sunk] (3 severely damaged & 1 sunk).& escaped but without landing the desperately needed supplies.

Chicago was lost to an aerial torpedo attack at night on the 30 th January 1943 where bright floating flares allowed a twin engine bomber to make an approach in darkness. The Japanese finally cleared their troops from Guadalcanal by February 7, 1943.

Canberra had the first 10cm magnetron Australian radar to go into service, even though for a very short time. The Type 271 was fitted to Australian Destroyers & corvettes (56) along with the Type 290.which came into service during 1942-43.It is noted that US Navy radar pickets at Okinawa sailed at 15 knots, which if used at Savo Island could have been used to shorten the gap between the patrols of Blue & Ralph Talbot. Many of the damaged US cruisers from the Guadalcanal campaign made their way to

Garden Island in Sydney for immediate repair before returning to the US. SG antenna is circled.





Australian Corvettes moored in 1945 with Type 271 & Type 290 radars.

The reminder to the US in Washington of the Japanese & US torpedo experience in the Pacific in WW2.

Japanese Type 97 torpedo at Garden Island, Sydney, from Midget Submarine attack on Chicago May 30, 1942.

In addition to the many US ships, as well as HMAS Canberra, which were sunk off Guadalcanal, a great many aircraft were lost in air battles defending Henderson Field & the area now known as “Iron Bottom Sound” has become sacred to the US Navy which each year makes a solemn passage to remember those lost.

This essay highlights in detail the radar aspect of its implementation into the first major amphibious operation by the US in the Pacific War which held many lessons for subsequent operations leading to the eventual defeat of Japan in the SWPA & finally to Japan itself. The isolation of Rabaul & debilitation of the Japanese air force planes & navy due to the twin attacks by the Allies in the Solomons & New Guinea was finally achieved by the US carrier borne attacks on Truk in February 1944.

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