Australia’s War: 80 years ago this week

13 October 1941
R.A.F. Starts Big Fires At Emden

LONDON, October 12.—The R.A.F. started big fires at Emden and in other parts of north-west Germany on Saturday night.

Two enemy supply ships were attacked in a convoy off the Norwegian coast. A fish oil factory in Norway also was bombed. Aerodromes in France were attacked by fighters. In all of these night operations only one plane was lost.

Pilot’s D.S.O. For Birthday

Flight-Lieutenant Finnucane

LONDON, October 12. — Flight-Lieutenant Brendan Finnucane, Irish-born ace fighter pilot attached to the Royal Australian Air Force Spitfire squadron in Britain, has been awarded the Distinguished Service Order for his brilliant work against the Luftwaffe. He will be 21 on Thursday.

Finnucane, who has shot down 21 Meßerschmitts, already has the D.F.C. with two bars.—C.M.S.S.

U.S. Captures German Arctic Post

WASHINGTON, October 12.—The United States Navy has captured and “disposed of” a German Arctic outpost—a radio station in Greenland.

Twenty prisoners, including a Gestapo agent and a group of Norwegian civilians, are being brought to an American port by a United States warship for examination. This announcement has been made by the Navy Department. This is the first reported activity by American armed forces in Danish islands now under United States protection. The capture occurred in September.

The brief official announcement said that the seizure was made by a warship of the United States Atlantic patrol off the Greenland coast. The patrol ship intercepted and inspected a small Norwegian steamer of 90 tons. Examination of the personnel revealed that the vessel had been sent to Greenland by Nazi authorities in Norway to establish a radio station which would send to German authorities weather reports and military information.

A search of the Greenland coast revealed the radio station, manned by the Gestapo agent and two other Norwegians, who previously had been disembarked from the Norwegian vessel. All radio equipment and supplies aboard were disposed of and the personnel were taken off.
13 October 1941 – North Africa

• A combined strike at a ground target by field guns and bomber aircraft acting in cooperation was to be carried out the next night.

• The artillery was to consist of the 2/7th Field Regiment's "E" and "F" Troops, the Fleet Air Arm was to provide the bombers, and the enemy camps at Point 207 were to be the target.

• The action was to start half an hour after midnight, by which time the bombers were to be over the troop positions.

• The artillery was to delineate the target by predicted searching fire, the aircraft were to unload bombs, incendiaries and flares for about a quarter of an hour, then after a pause of 15 minutes the guns were again to bombard the target for 15 minutes at a rapid rate.

• It was the first operation of its kind in the frontier sector.

• The operation was carried out to plan and without mishap.

• Observers stationed at selected points reported "fires, as though vehicles were burning, and a large explosion, as if an ammunition dump had been hit".
13 October 1941 - Germany

• The first three raids were conducted by the two flight commanders of No. 455 Squadron, Squadron Leader Reynolds (R.A.F.) attacking Berlin, and French twice attacking Frankfurt-on-Main.

• On the second trip French's Hampden was hit by flak before reaching the target but he continued on to bomb and return safely. He employed on this occasion a popular current technique of gliding from 19,000 feet to 9,000 feet before dropping his bombs, cutting the engines so that anti-aircraft sound locaters would be unable to direct battery fire against him.

• A month elapsed before the next attack, this time against Huls on 12th-13th October, when one R.A.A.F. Hampden failed to attack, and a second, unable to locate the target, bombed a searchlight position.

• The following night only one of two Hampdens succeeded in bombing Cologne although a number of fires had been started in the target area, and this city was relatively easy to locate by following the Rhine.
13 October 1941 - Britain

• Within six weeks (by 13th October) it (No. 458) was able to conduct its first operation with ten aircraft as against the single Hampden which No. 455 had sent out after three months; and it continued to operate regularly for the remainder of the year.

WELLINGTON HEAVY BOMBER OF R.A.F. IN FLIGHT. C July 1941
13 October 1941 - London

- Notwithstanding the trouble-free execution of the September program to relieve the first brigade of the 9th Division, Churchill, or his advisers in Whitehall, or both, were still obsessed with the notion that to proceed with the relief would pose a serious threat to the success of CRUSADER.

- After what he called a "suitable interval" Churchill made a final appeal to the new Australian Government on 13th October:

  I will not repeat the arguments I have already used, but will only add that if you felt able to consent it would not expose your troops to any undue or invidious risks, and would at the same time be taken very kindly as an act of comradeship in the present struggle.

- Curtin replied: War Cabinet has considered your request but it is regretted that it does not feel disposed to vary the previous Government's decision which was apparently reached after the fullest review of all the considerations involved.

- Auchinleck was therefore instructed that the relief was to proceed. Churchill's final word to the Australian Government was that he regretted their decision.
14 October 1941 – North Africa

• On the next day, 14th October, the 2/7th Field Regiment assembled near Rabia, having handed over its responsibilities to the 1st Field Regiment, R.A.

• On the 16th it moved off en route to Palestine.
NAZIS ONLY 65 MILES FROM MOSCOW
Tanks Still Advance; Battle Near Crisis

The battle for Moscow is fast moving to a crisis. Germany’s great tank advance on the city continued yesterday with renewed fury.

A London eyewitness told last night that advanced German units had reached Molotov, 45 miles east of the capital, but had been thrown back by strong Russian forces. Heavy fighting was continuing. Molotov is on the Smolensk-Moscow road, the one that Poppolin took.

After earlier shoving down of the drive the Germans attacked with masses of tank men and machines, and the Russians admitted new penetrations of their defenses east of the city.

Advanced German forces are apparently so close to the capital that citizens can hear the distant rumble of guns. Moscow’s civilians are digging tank traps and training in their own defense.

The German Radio yesterday issued a broadcast that Hitler had ordered that the Allies would be defeated by 1942 and if that failed, by 1943.

Four Queenslanders Share in Awards for Tobruk Bravery

Japan Has Not Abandoned Big Ambition

ARCHANGEL LANDING REPORT CAUSES STIR

MOSCOW CONFIDENT

Better Turn in Atlantic Fight

SECRET FUND

ARMY PAY, PENSION RISE IN BUDGET

Australia's War 13 October 41 ©Jerry McBrien Wk 26
3. HOBART - Approach Channel - Floating Mine - A Floating mine was sunk by H.M.A.S. "LITHGOW" on 14/10 while sweeping the Hobart approach channel. The position of the mine was 4½ miles S.W. of the Tasman Island lighthouse.

Comment - It will be recalled that a mine was swept up in this area last January when a channel was cleared for shipping following raider activity on this Station. It would appear likely that this latest mine belonged to the same field.

B. ADJACENT AREAS - Nil

C.O.I.C. 15/10/41

Muller (N)
Say Mid October 1941 - Manila

• By the middle of October, General MacArthur had chartered two ships to transport aviation fuel to Rabaul, Port Moresby, and Darwin, and arrangements had been made for further shipment of fuel to these points from the United States.
Airintal Darwin 3. 
0500Z/20/9

Most secret sources

NORTH of Australia Station

JAPANESE PALAU - DILLI FLIGHT - The 8th Flight which was expected to arrive in Dilli on 11/10 has not yet taken place. The vessel "NANYETI or ("NANEI") MARU" which acted as tender to the 7th experimental flight at the end of August was located on 10/10 50 miles north of the N.W. tip of New Guinea. Since then she has moved at a leisurely speed southwards between Halmahera Is. and New Guinea, passing west of Ceram Is. and Ambon. At 1800K on 14/10 her position was at or very close to Dilli.

In addition to this vessel, the following Japanese ships have been located in the vicinity -

(i) "ASAHI MARU" - close to Mapia Is. (N. of New Guinea) on 13/10. A vessel by this name acted as tender to the 6th experimental flight at the end of June and the vessel now located is presumed to be the same one.

(ii) "NABIRE MARU" - located 200 miles West of Palao on 9/10. This vessel visited Dilli for cargo almost immediately after the 7th Flight.

(iii) "SEIKAI MARU" - 3,100 tons. Located 150 miles west of south from Palao on 11/10. Has moved southwards slowly and was last located on 14/10 off the easternmost tip of Halmahera Is.

It is thought probable that these vessels are in the locality in connection with the expected 8th experimental flight.
4. JAPAN - Resignation of Cabinet - It is reported that the Konoye Cabinet resigned at 5 p.m. yesterday, 16/10, because of lack of agreement on measures to pursue Imperial policy.

Comment - As suggested in C.O.I.C. Appreciation of 6/10 on the Japanese situation, the fall of the Konoye Administration is one of the factors increasing the risk of war with the democracies, the danger being that the moderates under Prince Konoye will be replaced by extremists supported in their aggressive policy by German influence.
17 October 1941 - Mediterranean

• The Pass of Balmaha (photo) (758 GRT, 1933), the British coastal tanker which had overcome the fuel crisis at Tobruk in June finally ran out of luck and was torpedoed and sunk in the Mediterranean at (31°14′N 28°50′E) by a submarine with the loss of all 20 crew.

• The Greek cargo ship Samos (1,208 GRT, 1889) was also torpedoed and sunk in the same position with the loss of 31 of her 34 crew. Survivors were rescued by HMS Cocker.
17 Oct 1941 – Tobruk

• The relief was effected by a minelayer and three destroyers which came into Tobruk nearly every night of the moonless period. After the first trip on the 12th-13th October, the rest were on seven out of the nine nights from the evening of the 17th to the morning of the 26th. Most of the convoys brought in 1,000 men and took away a few less.

• On the night of the 17th-18th, the 2/Border relieved the 2/23rd Battalion and the 2/43rd departed; also portion of the 2/Essex arrived and more advanced parties went out.

HMS "Latona" 17 October 1941 by Frank Norton. The stores carried were mainly winter clothing, packed in bales and stowed along the upper deck. Lashed to the upper deck are gangways and chutes to facilitate unloading. Men in battledress and life belts sleep and read, for they will work during the night.
18 October 1941 - Melbourne

• The Australian War Cabinet on 18th October received a request from the United States to establish an air route between the Hawaiian and Philippine Islands and requesting the cooperation of the Australian Government in providing air bases at Rabaul, Port Moresby, Rockhampton and Darwin and offering American financial and technical aid.

• The War Cabinet welcomed the proposal and granted blanket authority to the War Department and its officers to undertake surveys and for the entry of construction parties to selected sites.

• The United States asked, too, that certain Australian aerodromes might be used for training of American personnel and for the storage of spare parts, fuel and bombs. Communication facilities were also requested.
18 October 1941 - Japan

• On 18 October General Tojo, the war minister, replaced Prince Konoye, the Japanese prime minister, who had resigned.

• Tojo also retained both the war and home ministries.

General Hideki Tojo Prime Minister and leader of the Imperial Rule Assistance Association
18 October 1941 – North Africa

- On the night of the 18th-19th the main body of the Essex came in and relieved the 2/24th Battalion, while the 2/23rd Battalion and part of the 2/3rd Field Company departed.

The salute after the ceremony at which General Morshead unveiled the memorial at the Tobruk War Cemetery. Designed by Lance-Corporal Sands of the 2/4th Field Company, the memorial was constructed by the 2/4th and 2/3rd Field Companies in August-September 1941.
JAPAN'S PREMIER CALLS FOR ACTION. Ties With Axis To Be Closer

Moscow Holds Out
Nazis Claim Move South

U.S. SENATE TO FACE WAR ISSUE.

ODessa, When Besieged

NAPLES HIT HARD BY R.A.F. BOMBS

AUSTRALIA AT WAR! Despite the war situation overseas,并无 news of any war activity in Australia at this time.

BRISBANE, MONDAY, OCTOBER 23, 1941

FORECAST: Main Map, Page 8.

GREATEST DAILY SALES IN QUEENSLAND.

10 PAGES 26

Workers Plan Big Speed Up Of Munitions

Late City: War News

Late City: War News
Comment - The activities of these ships is much more than is necessary for the normal operation of a flying boat flight.
18-19 October 1941 – Middle East

• Four ferrying flights to the Middle East were necessary during October, one Sunderland being away for nearly three weeks and another, ten days. These flights were again made to carry senior diplomatic and service personnel.

• Thurstun on 18th-19th October made a record flight under war-time conditions by flying to Alexandria in thirty-six hours, stopping only two hours at Gibraltar and four at Malta.

Flight Lieutenant G. R. Thurston at the controls of a Sunderland aircraft of No. 10 Squadron RAAF, at RAF Station Pembroke Dock with RAF Coastal Command.
19 October 1941 – Palestine

• On 19th October, the Australian ground crews were posted to Burg el Arab to be employed on maintenance duties. The only pilot on strength was Steege, temporarily attached from No. 3 as commanding officer.

Palestine. C. 1941. The mobile dressing station used by the medical officer of No. 450 Squadron RAAF in Palestine.
19 October 1941 - Washington

• On 19th October US codebreakers deciphered an intercepted radio message from Tokyo to its Honolulu Consulate, sent on 24th September, requesting regular detailed information about the location, within Pearl Harbor, of individual major ships.
The Battle of the Atlantic

• We have seen reports of the involvement of Australians and New Zealanders in the Battle of the Atlantic.
1 January 1941 - UK

• No. 10 Squadron RAAF was formed on 1 July 1939 at RAAF Base Point Cook, under the command of Wing Commander Leon Lachal.

• Later that month aircrew and ground staff from the squadron departed for Britain to be trained on the Short Sunderland aircraft which had been acquired to equip the squadron.

• It was intended that the aircrew would fly these aircraft to Australia after completing their training.

• Following the outbreak of war the Australian government offered to leave the squadron in Britain. As a result, No. 10 Squadron was the first RAAF squadron to see active service in the Second World War, when one of its aircraft made a flight to Tunisia on 10 October 1939.

• The squadron's major tasks during the war were escorting convoys, conducting anti-submarine patrols, and air-sea rescue.

• It sank its first U-boat on 1 July 1940.

• At the beginning of 1941 the squadron was operating mainly from RAF Mount Batten at Plymouth with a detachment of 4 aircraft at Oban in Scotland.
16 February 1941 - Britain

• At Uxbridge, after completing documents for record purposes and receiving kit to full scale, including such necessary evils in war-time Britain as steel helmet, respirator and identity card, Australians were sent on short leave preparatory to posting to operational training units.

• The early drafts were all of pilots only, and no difficulty was encountered in finding immediate vacancies for them, chiefly at No. 56 Operational Training Unit for fighter pilots, and Nos. 11 (Bassingbourn) and 30 (Lossiemouth) for bomber pilots.

• Men destined for Coastal Command had first to complete a course at a school of general reconnaissance, and accordingly, on 16th February, six sergeants were sent to No. 3 School of General Reconnaissance at Blackpool.

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<th>Month</th>
<th>R.A.A.F. arrivals (Pilots)</th>
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<th>On strength at end of month.</th>
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<td>December 1940</td>
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<td>January 1941</td>
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<td>February 1941</td>
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RAAF pilots arrived, posted and on strength at No. 3 Personnel Reception Centre, RAF Uxbridge.
9 March 1941 - Atlantic

- The 10 Squadron Sunderlands at Mount Batten were used for convoy patrols to the west of Ireland during the early part of the month, and on 9th March Squadron Leader Cohen sighted and attacked a U-boat in position 51 degrees 53 minutes north, 18 degrees 28 minutes west.

- In order to conserve fuel the two depth-charges on the port side had been hauled inboard during the search for the convoy, and when the U-boat was sighted suddenly in poor visibility only two miles distant there was no time to wind them out before an immediate attack was made on the crash-diving submarine.

- Two depth-charges set to explode at 100 feet and 150 feet respectively were dropped in this initial attack and then the remaining two were dropped ahead on track set deep at 400 feet.

- The convoy was found within half an hour and destroyers directed to the position of this attack. The U-boat was assessed as "probably slightly damaged".
Early March 1941 - Atlantic

- Steps to meet the threat of Uboats off Africa were being taken by providing air bases in that area, and three New Zealanders who had been flying Sunderlands over the Western Approaches from the early days of the war took a prominent part in the establishment of the first base for anti-submarine aircraft in West Africa.

- Flight Lieutenant T. P. Gibson was in charge of the ground and maintenance party which sailed from the United Kingdom in February 1941.

- Then, early in March two of the first three Sunderlands to fly to Freetown, were piloted by Flight Lieutenant Evison and Flying Officer Baggott.

- Their initial attempt was not without incident. On the first stage of the flight from Plymouth to Gibraltar, Baggott had an engine failure off Cape Finisterre but managed to reach Gibraltar safely. Evison was forced down in Portugal owing to shortage of petrol and he and his crew were interned. However, they managed to escape and returned to England by way of Gibraltar to collect another aircraft. Meanwhile the third Sunderland had been damaged at Gibraltar in a gale and had to return to England for repairs.
15 March 1941 – North Sea

- Wing Commander Curnow, newly arrived from Australia, assumed command of a Coastal Command unit, No. 224 Squadron R.A.F. on 15th March.

- 224 was an anti submarine unit flying Hudsons from RAF Leuchars on the East coast of Scotland.

Coastal Command aircraft began to operate from Iceland early in April 1941, and several New Zealanders flew with the first Sunderland squadron and the detachment of Hudsons sent there from the United Kingdom.

As well as escorting convoys and hunting U-boats, these aircraft flew regular ‘ice patrols’ over the Denmark Strait as far as Greenland in order to watch the extent and movement of pack ice in that passage, through which German raiders might enter the Atlantic.

On the Iceland airfield the Hudsons had to be protected from the fierce and sudden gales by mooring them to concrete blocks and providing windbreaks of lava rock faced with turf. Even so, on one occasion a gale blew six aircraft from their dispersal point, each machine dragging the concrete mooring blocks along with it. A Nissen hut is reported to have ‘taken off’ and ‘crash-landed’ on a runway.
The Battle of the Atlantic

• We have seen reports of the involvement of Australians and New Zealanders in the Battle of the Atlantic.

• And we have seen reports of the effects of shipping losses on Australian industries and Australians’ diets.

A SB2U Vindicator from USS Ranger flies anti-submarine patrol over Convoy WS-12, en route to Cape Town, November 27, 1941. The convoy was one of many escorted by the US Navy on "Neutrality Patrol", before the US officially entered the war.
27 June 1941 - Brisbane

Wide Effects on Primary Industry

Far-reaching domestic repercussions are expected by the Federal Government to flow from a new agreement just completed between Britain for the disposal of foodstuffs to Britain in the third year of the war in accordance with the shipping space available.

The Commonwealth Government will ask the dairy industry to transfer from the manufacture of butter to the manufacture of cheese and dried and condensed milk. In future a higher price will be offered for the milk content in cheese than that in butter, to encourage the industry to make cheese.

No eggs in the shell would be exported, but there would be large exports of dried eggs at a price probably equivalent to last year's price plus the cost of treatment.

Refrigerated space to the Middle East would be used to convey beef, and refrigerated space to Britain would be used for lamb. Surplus of beef still left in Australia would be canned and surplus lamb would be placed in refrigerated storage.

Domestic Effects

Sir Earle Page, announcing completion of the agreement, said that it had been made necessary because the volume of shipping space available to carry foodstuffs from Australia to Britain in the third year of the war would be only one-fifth that available in the first year.

The Federal Government would attempt to alter the consumption habits of the Australian people to assist in using up unexportable surpluses of foodstuffs.

Australian industries to make every effort to adapt their productions to shipping possibilities; for example, by de-boning, canning, or pressing meat. Alternative markets to be developed wherever possible.

Britain will release tinplate supplies and arrange for further tinplate supplies from the United States.
September 1941 - Atlantic

• During 1941, 120 New Zealanders served with the anti-submarine squadrons of Coastal Command as pilots, navigators, wireless operators and air gunners. Many were with the Anson and Hudson squadrons which did valuable work at this period of the war; others flew with the Sunderlands, while several were with the first Whitley and Wellington squadrons to operate against the U-boats.

• By September 1941, 54 New Zealanders had lost their lives while serving with the command, some when their machines developed engine trouble over the sea, others when they failed to find a landing area in bad weather. In one case a Hudson crashed into a balloon barrage and all the crew were lost. Several crews failed to return from reconnaissance patrols in the vicinity of the enemy coast, while a few disappeared completely on long patrols over the Atlantic.
The Battle of the Atlantic

• We have seen reports of the involvement of Australians and New Zealanders in the Battle of the Atlantic.

• And we have seen reports of the effects of shipping losses on Australian industries and Australians’ diets.

• But we haven’t looked at the outcome of the battle or the issues deciding the outcome.

• In the second half of 1941 intelligence was a major factor.
The breaking of the high-level German codes began with the efforts of the Polish secret service in the interwar period. By creating a copy of the basic German enciphering machine, the Poles managed to read German signal traffic throughout the 1930s with varying degrees of success.

However, shortly before the Munich conference in September 1938, the German Army issued two extra rotors so that the three rotors were chosen from a set of five—and in mid-September, darkness closed over German message traffic.

The Poles continued their work, however, and after France and Britain’s guarantee of Polish independence in March 1939, they passed along to the British what they had thus far achieved.

Considerable cooperation had also existed earlier between the Poles and the French.

Photo: The German Enigma-I machine, which used three cipher rotors out of a stock of five and also an additional plug board for up to ten wire connections.
Ultra

• Building on what they had learned from their Continental allies, British cryptanalysts finally cracked some Luftwaffe codes in April 1940, just before the great offensive against France and the Low Countries and some German army codes not long afterwards.

• As the war became mobile enemy communications were increasingly switched from landlines to radio, vastly increasing the amount of traffic to be intercepted and decrypted.

• The increase in volume increased the workload of decrypting but also the opportunities presented.

• Photo: Heinz Guderian in the Battle of France, with an Enigma machine. Note one soldier is keying in text while another writes down the results.
Admiralty

• In World War II the British cryptanalysis organization, the Government Code and Cypher School, was housed outside London at Bletchley Park.

• Responsibility for analysing and disseminating the results of its work in the maritime sphere rested, with the Admiralty's Operational Intelligence Centre (O.I.C.).

• It communicated directly, not only with the operational authorities in the Admiralty and at the R.A.F.'s Coastal Command, but also with ships and fleets at sea.

• During the ill-fated PQ.17 convoy the First Sea Lord, Admiral Pound, refused to accept Denning's accurate appreciation that Tirpitz and her squadron had not left Altenford to attack the convoy and gave the mistaken order to scatter which led to disaster.

• Such failures were, however, rare and in fact O.I.C.'s advice was very seldom ignored.
Italians

- Ultra intelligence derived from intercepted and decrypted Luftwaffe signals aided the British Army’s Operation Compass victory over the much larger Italian army in Libya in December 1940 – February 1941, mainly by the interception of Italian convoys for which Luftwaffe air cover had been arranged.

- Ultra intelligence from the same source greatly aided the Royal Navy’s victory over the Italian navy in the Battle of Cape Matapan in March 1941.

- Although the Allies lost the Battle of Crete in May 1941, the Ultra intelligence that a parachute landing was planned, and the exact day of the invasion, meant that heavy losses were inflicted on the Germans and that fewer British troops were captured.

- In June 1940, the Italians were using book codes for most of their military messages, except for the Italian Navy, which in early 1941 had started using a version of the Hagelin rotor-based cipher machine C-38. This was broken regularly and currently from June 1941 onwards by the Italian subsection of GC&CS at Bletchley Park.

- By the peak of the Battle of the Mediterranean in 1941, Bletchley Park was deciphering daily 2,000 Italian Hagelin messages.

- In the Western Desert Campaign, Ultra intelligence helped Wavell and Auchinleck to prevent Rommel’s forces from reaching Cairo in the autumn of 1941.

- Ultra intelligence from Hagelin decrypts, and from Luftwaffe and German naval Enigma decrypts, helped sink about half of the ships supplying the Axis forces in North Africa.

Hagelin C-38 machine. Also extensively used by the US Army who designated it M-209.
16 April 1941 - Mediterranean

• In the Battle of the Tarigo Convoy
  • The German cargo ships Adana (4,205 GRT, 1922), Aegina (2,447 GRT, 1922), Iserlohn (3,704 GRT, 1922), the Italian ammunition ship Sabaudia (1,590 GRT) and the Italian destroyers Luca Tarigo and Baleno were shelled and sunk off the Kerkennah Islands, Tunisia, by the 14th Destroyer Flotilla consisting of HM Ships Janus, Jervis, Mohawk and Nubian, commanded by Captain Mack in Jervis.
  • The German cargo ship Arta (2,452 GRT, 1921) was beached off the Kerkennah Islands.
  • The Italian destroyer Lampo (1,218/2,063 t, 1932) was heavily damaged and ran aground in the action.
  • HMS Mohawk was torpedoed and sunk by Luca Tarigo with the loss of 43 of her 219 crew.

• The British had been alerted to the convoy's sailing by radio intercepts. On 15 April, a Maryland reconnaissance plane had sighted and shadowed the convoy and the four British destroyers left Malta at 6 p.m. to intercept.

• Using radar, the British ships ambushed the Axis convoy in the dark as it maneuvered around the shallow waters surrounding the Kerkennah Islands.

• As the convoy passed a buoy marking sandbanks, the British opened fire at 2,000 yards and closed to as near as 50 yards.

An important part of the convoy’s cargo had been much of the transport and heavy equipment of the German 15th Armoured Division.
• The German Army machine Enigma-I (photo) used three cipher rotors out of a stock of five and also an additional plug board for up to ten wire connections.

• The Navy’s similar "Funkschlussel M", by adding three more cipher rotors to the stock to allow a choice of three rotors from a set of eight gave many more possibilities for producing different cipher-alphabets without repeating a sequence of letters.

• The most used machine M-3 had four different settings, three of which were changed daily, and one of which was changed with each message: First, the operator could choose three out of eight cipher rotors, permitting 336 different combinations of rotor sequences; Second, each rotor had a revolving ring with 26 positions to change the inside wire-connections; this permitted for the three inset rotors 263 or 17,576 ring positions; Third, there were 1547 possible plug connections on the plug board; And fourth, the operator could set each rotor to 26 different positions before beginning to encipher; this again gave 17576 possibilities. By multiplying these factors you can get at the theoretically possible total of cipher combinations, which is in the area of 160 trillion.
Cracking the German Naval ciphers was a far more difficult task than that of breaking the German Air Force or Army codes. The British had been making use of radio intercept information since early 1940 when "The Bomb" (photo) was put into operation at Bletchley Park.

This first useful result was related to the Luftwaffe.

The Naval Enigma Code, however, had resisted all attempts at decyphering and the British realized that a capture of the German cypher machine was necessary to any useful decryption program.

The effort to capture a German Enigma machine intact met with success in May of 1941 when on 7th, they captured a German weather trawler with considerable material detailing settings for naval codes.

Then on the ninth U-110 attacked a convoy south of Greenland.
7 May 1941 -

• The Hunt-class minesweeper HMS Stoke (710t, 1918) was bombed and sunk by three direct hits at Tobruk, Libya by Junkers Ju 87 aircraft with the loss of 21 crew. Survivors were rescued by HMS Ladybird.

• The German weather ship Munchen (306 GRT, 1927) was captured south east of Iceland by HMS Somali.

• She was reported to have been scuttled by her crew, to prevent the Germans from learning that an Enigma cypher machine had been captured.
The corvette Aubrietia depth-charge U-110, forcing her to the surface. Bulldog and the destroyer Broadway first fired on, then closed on the U-boat, whose crew were abandoning the boat.
9 May 1941 -Ultra

• 20 year old sub lieutenant David Balme was on the bridge of HMS Bulldog, as navigator and gunnery officer. This is his account:

• Suddenly at noon on the 9th of May two ships were hit by torpedoes and we went to action stations.

• We turned the convoy 45 degrees away from the attack and Bulldog went full speed to the likely position of the U-Boat.

• The corvette Aubretia on the side of the attack gained contact with the U-Boat and attacked with depth-charges.

• The U-Boat surfaced 400 yards from us and we opened fire with every gun. The noise was deafening, especially from our Lewis machine guns which were being fired from the bridge over our heads by anyone who could pick them up.

• However, it was undoubtedly the noise of all the shells and bullets hitting the U-Boat which caused the German crew to panic, all jumping overboard as fast as they could without successfully scuttling the U-Boat.
9 May 1941 -Ultra

• The order went out: ‘AWAY ARMED BOARDING PARTY’. The Captain ordered me to take the boarding-party and get what I could out of the U-Boat.

• A submarine in a calm sea is a difficult ship to board as it is so bulbous. But in rough seas it is even more difficult. My bowman jumped onto the U-Boat with the painter and I walked up to the bow over the oarsmen, and so aboard and then got my revolver out of its holder.

• The worst moment of the boarding of the U110 was going down the last vertical ladder from the lower conning tower to the control room. Going down bottom first, I felt a very vulnerable target to any German still down below. I needed both hands, so my revolver was back in its holster, but on arrival in the control room, I got it out. The most eerie feeling was the complete silence except for an ominous hissing sound which either from the batteries or a leak in the hull.
The secondary lighting gave a rather dim ghostly effect. Speed in searching the U-Boat was now essential, as I felt sure that the scuttling-charges would go off sooner or later, especially as there were continuous explosions around us from depth-charge attacks on other U-Boats. This was a most unpleasant and frightening noise.

We formed a human chain up the two ladders and began passing up books, charts and wireless equipment. The great thing was for all the boarding-party to be kept busy, passing out the treasures including the Enigma cypher machine which was found in the wireless office. It was unscrewed from the table and so began its fateful journey up the conning tower, into the motor-boat to the Bulldog. Thence to Iceland, then to Scapa Flow and from there to Bletchley.

Meanwhile, on deck, Bulldog came in close, and we tried to secure a towing wire. The first one parted and then Bulldog had to leave to investigate and attack a reported U-Boat contact. This was indeed a desolate and awful moment. There was I, with my boarding-party, aboard U110, in the middle of the Atlantic, alone with no ships in sight with the wind and sea gradually increasing. This must have been about 16.00. there were no more books or moveable gear we could collect, so I battened down the watertight hatches and we waited.

Happily, the Bulldog returned and we set about securing a tow. The boat which had been left with us, went over to Bulldog and brought back our Chief Bosun’s mate, who was a great help.

We eventually managed to secure a tow across. The tow held and thus at about 18.30 we evacuated the U-Boat and returned to the Bulldog after having spent 6 hours in U110.

Aubretia had taken on board the survivors of Esmond and now rescued U-Boat crew. One German petty officer spat in the face of British sailor as he was helped up the side of Aubretia and was pushed back into the Atlantic until he remembered his manners. The survivors were hustled below by the crew of Aubretia to join crew from Esmond, and none saw their boat boarded.

Captain Lemp was last seen attempting to swim back to U110, having appreciated that the scuttling charges had not been set. He was one of 14 German sailors who lost their lives.
9 May 1941 - Ultra

• In a strengthening swell at 11.00 the next morning the U-Boat sank, and with her bowing standing vertically out of the water, the tow wire was cut.

• Bulldog refuelled at Rekyavik on the night of the 10th and set off for Scapa Flow loaded with prisoners and the captured documents and equipment, filling two packing cases.

• This included the enigma coding machine with its plugboard connected up and its rotors set, Lemp’s Ritterkreuz (later returned to his sister by Captain Baker-Cresswell (photo)), a signed photo from Grossadmiral Donitz (to be installed in the Captain’s downstairs loo), the keys for the German Dolphin (that is, naval) code for April and June, a book containing short signal code, Kriegsmarine grid charts, charts showing safe passage through German minefields in the north sea and much else.
• With these seizures, British intelligence gained the navy Enigma settings for the next two months. As a result, the British were able to read the German Naval code "Hydra" almost currently at the end of May.

• Because some difficulties still barred the way to the total solution of the cypher it was decided to capture a second trawler at the end of June. She provided the settings for July, and by the end of that month Bletchley's mastery of the naval Enigma was complete.

• Admiral Dönitz closely controlled German submarines from shore so a massive amount of signalling went back and forth to coordinate movement of wolfpacks (groups of U-boats).

• The British were therefore able to gain invaluable information ranging from the number of U-boats available, to tactical dispositions and patrol lines.

Admiral Dönitz observing the arrival of U-94 at St Nazaire in France in June 1941.
Admiralty

• The capture of U-110 enabled the British to read currently the main operational cipher, code-named Hydra, then in force.

• Nor was the German assumption that once the validity of the accompanying instructions had expired our cryptanalysts would once more be defeated, sound.

• Hydra continued to be decrypted, although with varying delays, throughout the war.

• There were, however, other ciphers: for units in the Mediterranean, for training U-boats in the Baltic, for specific operations by the heavy ships of the main fleet, for cruiser warfare and blockade runners on the broad oceans.

• These last two were never broken, but most of the others eventually were.

• The point is that the ability to decrypt one particular cipher did not necessarily or immediately lead to the penetration of all the others.

• Photo: Decrypt sheet from Bletchley.
Ultra

- the intercepts and decrypts in the summer of 1941 gave the British government, and Churchill in particular, an accurate picture of Rommel’s tank strength. That information indicated that the British army had considerable superiority in numbers in the North African theater against the Afrika Korps.

- These quantitative returns could not indicate, however, such factors as the technological superiority of German tanks and particularly the qualitative edge in doctrine and training that the Germans enjoyed.

- The intercepts, however, explain why Churchill kept consistent pressure on British Eighth Army commanders to attack the Afrika Korps.

- By the first half of 1941, as more and more U-boats were coming on line, the German submarine force was beginning to have a shattering impact on the trade routes on which the survival of Britain depended. The number of British, Allied, and neutral ships sunk climbed ominously upward.
Admiralty

• The cracking of Hydra did produce tremendous results. It played no significant part in the sinking of Bismarck, but it did lead, thanks to instructions broadcast to U-boats, to the mopping up of seven tankers and supply ships sent out to support the battleship on her proposed raiding cruise.

• Hydra also disclosed the dispositions and movements of the U-boats and enabled the use evasive routing of convoys with some success and to gain a far greater insight into Uboat strategy and tactics.
Admiralty

- Difficulties remained:
  - Decrypted intelligence could only be obtained from signals transmitted by radio. We could learn nothing of messages sent by land line, or of instructions given to U-boat commanders before sailing, or of the deliberations of Donitz with his staff officers, unless these were signalled to those at sea. This could, and often did, leave large gaps in our knowledge.
  - The cipher settings were changed every twenty-four hours and therefore had to be broken afresh on each occasion (see chart opposite). The time taken to achieve this varied greatly at different periods during the war. In broad terms current reading was achieved from the end of May 1941 to July or August. Thereafter time lags of from 24 to 48 hours began to occur, although there was some current reading up to the blackout in February 1942.
  - To be of operational value, decrypting had to be swift. Intelligence that was more than forty-eight hours old was liable to have been overtaken by events and to be of use only as background information.
Admiralty

- German Naval charts were overlaid with a lettered and numbered grid, by reference to which all positions were given. Thus 51 degrees 30 minutes North 25 degrees 40 minutes West would be described as, say AB1234. This represented no difficulty to us once a fragment of a German gridded chart had been captured and the whole reconstructed.

- However, from November 1941 onwards, the Germans introduced a simple substitution code into their grid reference so that AB1234 became, for example CD5678, and these codes were changed frequently. Until each new formula had been solved we were unable, sometimes only for minutes but often for days, to say exactly which of various perfectly feasible alternatives gave the correct position.

- There were other less obvious difficulties in pinpointing the positions of U-boats and in keeping convoys clear of them. The navigation of the U-boats themselves was not always accurate, nor could we (or indeed Donitz) always estimate their speed of advance correctly. Despite the volume of signalling, days might elapse before a U-boat on passage would report its position.

- Similarly our own convoys and their escorts would not break wireless silence unless they thought that their position was already known to the enemy. They might be unable to comply with diversions ordered and not report the fact, or they might, because of gales, be fifty or more miles ahead or astern of their estimated positions on our plots.
6 October Convoys

• On October 6th, 1941, most of the German U-boats were chasing a Gibraltar convoy, so the North Atlantic convoy route was almost free of U-boats.

• The Allied convoys east of 30° West were escorted by British Escort Groups, those to the west were escorted by American Task Units and Canadian Escort Groups.

• The German decrypting service (BDienst) could decrypt Allied signals with considerable time lag only. But they got enough dates to reconstruct the convoy timetable. The U-boat command intended to block the way of the next pair of convoys expected around the 15th of October.

• Its first step was to signal a “heading point” southeast of Greenland for some U-boats coming out from Norway.

• On this day, October 6th, the estimate of the U-boat-situation by the Submarine Tracking Room seems not to have been very accurate. The positions of only four outgoing boats south of Iceland were plotted fairly well, after decrypting the signals of escort vessels, which had reported the release of those subs off Norway some eight days earlier.
8/9 October Convoys

• On the 8th of October the 52 ships of the Canadian-escorted slow convoy SC.48 had cleared the Belle Isle Strait.

• It was escorted by a Canadian escort group consisting of the Town-class destroyer HMCS Columbia (Lt Cdr SW Davis as Senior Officer Escort), and seven Flower-class corvettes; HM Canadian ships Wetaskiwin, Rosthern, Baddeck, Camrose and Shediac, HMS Gladiolus and the Free French Naval Forces' Mimosa.

• SC48 was to follow a convoy route recommended by the Admiralty’s Trade Division on the 26th of September, and approved by the Convoy & Routing section in Washington (OPNAV 38S) on the 28th.

• But during the night of the 8th to 9th October Bletchley Park decrypted the "heading point" signalled by the U-boat command three days earlier, and this point was exactly on the convoy route.

• So the Admiralty on the 9th recommended re-routing SC.48 to the south, to evade the U-boats running for their "heading point". OPNAV concurred.
10/12 October Convoys

• On the next morning the Canadian Senior Officer Escort (S.O.E.) received new course instruction from OPNAV 38S. The Admiralty instructed the west-going convoys ON.23 and ON.24 running on the British side of 30° West, to go south also, after effecting the exchange of escort groups at the pre-arranged point.

• Later on the 10th, U-boat command signalled to the three U-boats first arriving an “attack square” and ordered an adjacent "heading point" for the next four boats. These signals were decrypted during the morning of the 12th.

• With three U-boats in position and four more nearing the southern end, the Submarine Tracking Room estimated that the U-boat command was trying to establish a patrol line across the course of SC.48.

• Only two hours after the recommendation of the Admiralty, OPNAV 38S ordered the S.O.E. to turn SC.48 immediately southeast, and again two hours later gave a new route instruction.

HMCS Shediac, one of the Flower class Corvettes of the escort.
13/14 October Convoys

- This re-routing order led to some problems on the 13th, because SC.48 would pass very close to the west-going ON.23, and a fast troop convoy, TC.14 would have to go round both these convoys. Some re-arrangements had to be made.

- In turn, on the 13th, the U-boat command ordered separate "attack squares" for the next four U-boats, and on the 14th the area of these attack squares was exactly known to the Submarine Tracking Room.

- The three convoys were passing close to the southern end, while the next west-bound convoy, ON.24, was ordered to make a short detour to the southeast, to get out of the way of TC.14 and SC.48. All seemed to be set for a cleverly planned and well executed evasive routing operation.

- At this point SC 48 was in some disarray; 11 of its ships, including Castalia with the Convoy Commodore, were straggling following heavy weather on the night of 9/10 October.

- Columbia and two of the corvettes, Camrose and Rosthern, were detached looking for them. A third corvette, Shediac was also separated by the storm and out of radio contact.

- On 14 October SC 48's escort comprised just four corvettes; Wetaskiwin (as Acting SOE), Baddeck, Gladiolus and Mimosa.

Officers on the bridge of a destroyer, escorting a large convoy of ships keep a sharp look out for attacking enemy submarines during the Battle of the Atlantic. October 1941
15 October Convoys

• In the early light of the 15th, two ships were torpedoed.

• The attacking U-553 had met the convoy by chance, running up to its position in the new patrol line the U-boat command had ordered only a few hours earlier for the seven boats in the area and six additional boats coming up from France.

• Intelligence gained by decrypting could not prevent such chance contacts, even if the U-boats situation plot was, as in this case-fairly accurate.

• In 1941 the escorts were not equipped with high frequency direction-finders, which later were used so effectively to shake off the first shadower, and they had no radar which could distinguish between a U-boat and the wave echoes at distances of more than four miles.

• So U-553 began to send its hourly contact signals, providing a homing signal for the nine U-boats which the U-boat command had ordered to close and attack.
15 October Convoys

- But the signals of U-553 were also intercepted by the Allied shore listening stations. Without decryption, which needed too much time anyway, the signals could be identified by their prefix "B-bar" and by their bearings to be shadowing signals from SC.48.

- The Admiralty was thus able, using this other form of radio intelligence, to send in the afternoon of the 15th two corvettes of convoy ON.25 and two destroyers of convoy TC.14 to the assistance of the threatened convoy SC.48.

- In the evening also OPNAV 38S ordered the commander of the American Task Unit 414, escorting ON.24 to disperse his convoy and to take his five destroyers to help the attacked convoy. This could be done, because the U-boat situation map clearly showed no dangers from U-boats ahead of the dispersed ships.

- Y station sites in Britain

- Beachy Head, Sussex, Beaumanor Hall, near Loughborough (Army), Beeston Hill, Beeston Regis, Norfolk, Bishop's Waltham, Hampshire (Army), Brora, Sutherland, RAF Canterbury, Kent, RAF Chedle, Staffordshire, RAF Chicksands, Bedfordshire (RAF), RAF Clophill, Bedfordshire, Cromer, Norfolk, Forest Moor, near Harrogate (Army), G.P.O. Transatlantic Radiophone Station Kemback, near Cupar Fife, Denmark Hill Police Station, Camberwell (operated by the Metropolitan Police and Post Office for the Foreign Office), Met Office Dunstable, Bedfordshire, Felixstowe, Suffolk, Gillingham, Kent, Gorleston, Norfolk, Hall Place, Kent, Harpenden, Hertfordshire (Army, No. 1 Special Wireless Group), Hawkshaw, Fife, HMS Flowerdown, Winchester, Hampshire, HMS Forest Moor, Harrogate, Yorkshire, Kingston Hall, Derbyshire, RAF Kingsdown, Hollywood Manor, West Kingsdown, Kent, RAF Monks Risborough, Buckinghamshire, Knockholt, Kent (run by the Foreign Office for Non-Morse radiotelegraphy signals), Markyate, Hertfordshire (Army), Newbold Revel, RAF "Y" Service Secret Intelligence and German Telephony Communications Base, Warwickshire, North Walsham, Norfolk, Sandridge, Hertfordshire (Foreign Office), Saxmundham, Suffolk, Scarborough, Yorkshire (Royal Navy), Shenley Brook End Milton Keynes (Army), South Walsham, Norfolk, Southwold, Suffolk, Stockland Bridgwater, Somerset, Stockton-on-Tees, Cleveland, HMS Ventnor, Rew Down, Isle of Wight, RAF Waddington, Lincolnshire, Whitchurch, Shropshire in The Old Rectory, Clapton Street (Foreign Office), Wick (RAF), Wincombe, Donhead St Mary, Wiltshire (GPO for the Foreign Office).
15 October Convoys

- Later on 15 October Columbia rejoined.
- At 16.24 hrs, U-553 dived after being sighted by HMCS Columbia (Lt.Cdr. (retired) S. W. Davis, RN) while shadowing convoy SC 48 off its port beam.
- The destroyer obtained no Asdic contact but dropped six depth charges at the diving spot and then remained in the area to keep U-553 down.
- At 18.15 hrs, the U-boat fired a stern torpedo at the destroyer, but she managed to evade the attack after a lookout saw the torpedo track.
- HMCS Columbia picked up a good contact and delivered an accurate depth charge pattern, but U-553 had already dived to 55m (180ft) and suffered only minor damage.
- In the meantime HMS Gladiolus joined the hunt, but carried out no attacks as the U-boat had already crept away. (Sources: KTB U-553/ADM 237-187).

HMCS Columbia formerly USS Haraden. Recommissioned on 4 December 1939 and transferred to the Royal Canadian Navy on 24 September 1940.
15 October Convoys

• During the day U-558 joined, having encountered the ship Vancouver Island sailing independently; she was sunk with the loss of all 73 crew and 32 passengers.

• Before nightfall U-568 also arrived, and the three boats prepared to attack.

• As darkness fell on the night of 15/16 October the U-boats attacked again. U-568 attacked and sank Empire Heron. Gladiolus counter-attacked, and U-568 was driven off.

• Gladiolus then detached to pick up survivors, but never rejoined the convoy; she was lost with all hands, reportedly sunk by U-568 on the 17th.

HMS Gladiolus, first of 294 Flower class Corvettes
Length 205 ft (62.5 m)
Beam 33 ft (10.1 m)
Speed 16 knots (29.6 km/h)
A Type VIIC U-Boat could do 17 knots on the surface.
16 October Convoys

- After midnight on 15/16 October, SC 48 made an emergency turn to port, followed before dawn by a turn to starboard, in an attempt to shake off pursuit. This was initially successful, but the pack regained contact in the afternoon of 16 October and again closed in.

- Also in the afternoon of 16 October DesRon 13 came up after dispersing ON24. This comprised the destroyers USS Decatur, USS Kearny, and USS Livermore, led by USS Plunkett (Capt Thebaud). These were joined later by Thebaud's fifth destroyer, USS Greer, accompanied by HMCS Pictou.

- Immediately on reaching the action, Kearny dropped depth charges on sonar targets and continued to attack throughout the night.


- As senior officer present, Thebaud assumed command of the escorts. Though he had seniority, Thebaud had little experience in escort work, and a number of mistakes were made allowing the U-boats to mount a successful attack that night.
17 October Convoys

• In the night following the U-boats sank six more ships.

• At the beginning of the midwatch 17 October, USS Kearny stopped to avoid a collision with a corvette, and was torpedoed by U-568 on the starboard side.

• The crew confined flooding to the forward fire room, enabling the ship to get out of the danger zone with power from the aft engine and fire room.

• Regaining power in the forward engine room, Kearny steamed to Iceland at 10 knots escorted by Decatur and Greer, arriving 19 October.

• Kearny lost 11 men killed, and 22 others were injured.

• Kearney’s attack on the U-boats was specifically cited as a provocation in Hitler's declaration of war on the U.S. two months later.
17 October Convoys

- In the early hours of 17 October more warships arrived: HMS Highlander and Broadwater from TC 14, and HMS Abelia and Veronica from ON 25.

- With this reinforcement further attacks were warded off, but the pack remained in contact, awaiting a further opportunity.

- At dawn on 17 October the convoy was joined by its Western Approaches escort. This was EG 3 (Cdr Joe Baker-Cresswell (photo) as SOE in Bulldog), comprising four destroyers (HMS Bulldog, Amazon, Richmond and Georgetown) and one corvette (HMS Heartsease), with two trawlers and a rescue ship.

- The RCN group departed at this point, being low on fuel and DesRon 13 left to follow Kearny to Iceland.

- The pack was still in contact, but further attacks were frustrated by the escort. Veronica made a determined attack on a contact and claimed a kill, but no U-boat loss was confirmed. A Catalina flying air cover also bombed U-558 which was damaged, but continued to shadow until the attack was called off.
18 October Convoys

• On the night of 17/18 October the pack tried again; all attacks were repelled but U-101 fired on Broadwater, the destroyer was hit by a torpedo on the starboard side forward of the bridge and lost its complete bow. The three A/S trawlers of EG 3 were sent to her assistance and took off the crew. She remained afloat for another 12 hours, but had to be abandoned and sunk. Five officers, 40 ratings and eleven survivors rescued from W.C. Teagle and Erviken the night before were lost.

• On 18 October BdU ordered the attack discontinued. The patrol line, which had never completely formed, was dissolved, the remaining boats being sent west to form a new patrol line off the coast of Canada.

• The remaining boats were moved east to form a new patrol line, Reisswolf, south-east of Greenland.

HMS Broadwater. Completed in February 1920 as USS Mason (DD 191) for the US Navy. On 8 Oct 1940 transferred to the Royal Navy and renamed HMS Broadwater (H 81).
22 October Convoys

• SC 48 continued without further loss, the 31 ships arriving at Liverpool on 22 October 1941.

• The 11 stragglers which had become separated in the storm on 10 October had been gathered up by Camrose and Rosthern.

• Led by Commodore Sanders in Castalia and with just two corvettes as escort this group was able to make the crossing without interference, arriving in Britain 10 days after the main body.

• Some of the losses, in the face of a large and powerful escort force, can be attributed to Captain Thebaud's inexperience in convoy escort duty. This, and other cases, led to the practice of leaving the escort group commander of the convoy in charge of its defence, regardless of seniority; a major break with tradition.
October Convoys

• Captain Thebaud’s career came to no harm. He remained in command of Desron 13 until March 1942.

• Subsequent commands included USS Boise during the invasions of Sicily and Anzio, Cruiser Division 10 at the Philippine Sea and First Naval District 1949 to 51.

• He served as Assistant Chief of Staff to the Commander in Chief, US Fleet, Director of Naval Intelligence and Naval Inspector General.

• He was awarded decorations by the US, British and French governments. He also received a Letter of Commendation with Ribbon from the Commander in Chief, US Atlantic Fleet, citing him for "meritorious service as Commander of a unit of ships engaged in escort and convoy "...operations in the Atlantic during the second World War.

• He retired as a Vice Admiral.

• Photo dates back to award of the Navy Cross, cited for "distinguished service...as commanding officer of the USS Paul Jones (old) acting as escort to troop and merchant convoys from Hampton Roads, and in patrolling against enemy submarines from June to October 1918 ...
October Convoys and Ultra

- SC48 illustrates the effect of the break into “Hydra” but it was undoubtedly a victory for the U-boat arm; SC 48 lost nine ships of 51,093 tons, while the escort lost two ships sunk and or damaged; no U-boats were lost.

- However in general evasive routing informed by “Ultra” was successful.

- The dramatic decline in sinkings (compared with those that had occurred during the first five months of 1941) cannot be explained other than that Ultra gave the British a crucial edge over their undersea opponents.

- No new technology, no increase in escorts, and no extension of air coverage had occurred. Ultra alone made the difference.
Atlantic

• The knowledge gained from Ultra information played a key role in the devastating blow that the British dealt the German supply fleet in June. However, it was also evident afterward that they may have compromised the source of their knowledge simply because it was so successful.

• The German Naval Staff did mount an inquiry as to a breach of security but concluded that the British knowledge was due to spies, agents and happenstance rather than their ability to decipher and read German message traffic.

• Everyone on the German Naval Staff may not have been convinced. For one reason or another the Hydra code was replaced in February of 1942 by the more complex Triton code.

• This act blinded the code breakers, both British and American, throughout most of the remainder of the 1942.

• Photo: A four-rotor Kriegsmarine (German Navy, 1. February 1942 to 1945(Triton)) Enigma machine on display at the U.S. National Cryptologic Museum
Atlantic

• The horrible shipping losses suffered during 1942 may be as much attributable to the lack of special intelligence as to the shortage of escorts and airplanes. Without Ultra information of the U-boat movements, routing convoys to avoid them was extremely difficult.

• The Allies used whatever information they could, but it was always incomplete, often not accurate and occasionally misleading. The high frequency direction finding system was operating but the area encompassed by the HDF "fix" was often far too large to be of much use except to confirm the already certain knowledge that U-boats were in operation on the North Atlantic convoy routes.

• Commanding the submarine tracking rooms of their respective services, Commander Rodger Winn RNR (photo) and Commander Kenneth Knowles USN collaborated to maintain a comprehensive intelligence picture of Axis operations in the Atlantic.

• By reliance on combat reports, past patterns, sightings and HFDF the Allies were able to keep their heads just above water for the ten-month period of Ultra blackout.
Atlantic

• In December 1942 the Allies broke the German Triton code. Two things worked against them, however. First, unknown to the Allies the German intelligence "B" service was decrypting the Allied convoy codes.

• Working pretty much in the same manner as Bletchley Park and OP-20G, the Germans were able to piece together a great deal of information about the convoy system, including precise convoy timetable information.

• This allowed Doenitz to place his wolf packs across the convoy lanes at the appropriate times and places to inflict the maximum damage.

• The second thing working against the Allies was that even though the initial breakthrough in decryption of German traffic had taken place, the messages were not being decrypted and read in time to be of direct operational use and in fact for the most of the month the traffic was not decrypted until after the operation had already taken place. In order for Ultra to have anything but historical value, it had to be timely.
During this period and up until mid-1943 the Allies were on the defensive and the U-boats had the upper hand.

The lack of timely Ultra information in December of 1942 was costly to the Allies. It was never easy, however, even when the codes were being read currently to take full advantage. First, even though the basic cypher was broken, the Germans were changing codes on a daily basis.

Further, even when decrypted messages were coming in currently, they were often of little use. Some were fuel reports or weather reports from transiting U-boats nowhere close to a possible attack position on a convoy while others were directives from Doenitz that contained no position or other immediately useful information.

Thus, the year 1942 came to close with the U-boats still retaining the upper hand in the Battle of the Atlantic.
Atlantic

• Calendar year 1942 was the worst year of the war for the Allies in the Battle of the Atlantic.

• Even though the United States industrial machine was now beginning to provide the shipping necessary to keep the supplies flowing, there was a net loss of tonnage as the ships could not be replaced fast enough to keep up with the losses to the U-boats.

• At the end of the year, 8 1/2 million tons of Allied shipping had been sunk in the preceding 12-month period.

• Against this loss the Allies had sunk only 85 U-boats, one U-boat sunk to nearly 10,000 tons of Allied shipping sunk.
**Losses from All Causes and New Construction of United Nations and Neutral Tankers and Other Types of Cargo (and Passenger) Vessels.**

**First Eleven Months of 1942**

<table>
<thead>
<tr>
<th></th>
<th>Gross Tonnage in 1,000's of Register Tons</th>
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<tr>
<td></td>
<td>Losses from All Causes</td>
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<tr>
<td></td>
<td>All Types</td>
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<td>January</td>
<td>518</td>
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<td>November</td>
<td>755</td>
</tr>
<tr>
<td>Totals</td>
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War in the Pacific 1943 - ©Jerry McBrien - Wk 9
These losses of 8.5 million tons in 1942 were 20% of the 42 million tons of shipping capacity available at the beginning of the year.

<table>
<thead>
<tr>
<th></th>
<th>Gross Tonnage in 1,000's of Register Tons</th>
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<td>Total</td>
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<td>Other cargo or cargo and passenger vessels -</td>
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</table>

* The vessels owned or controlled by the United Nations include vessels taken over by their armed forces."
Atlantic

• In spring 1943 the Allies were growing stronger.

• One of the factors effecting the outcome of Atlantic battles was the Ultra intelligence.

• With the cracking of the Triton code, OP-20G begins to supply timely information more and more rapidly. By February 1943, traffic was being read with an average time lag of a little over 24 hours.

• In June 1943 the Admiralty changed its codes and the “B” Dienst lost its ability to read them.

• Aircraft and airborne radar along with more and better escorts were turning the tides. The U-boats had no place to hide by late spring. The air gaps were covered and attempts by U-boats to surface for attacks were thwarted more often.

The well-faired radomes of the ASV Mark IIIC, introduced in the spring of 1943, produced less drag than the large antenna sets of the Mark II. The microwave frequencies achieved using the cavity magnetron gave longer range and was not detectable by the U-boats’ Metox receivers.
High-frequency direction-finding

- One of the more important developments was ship-borne direction-finding radio equipment, known as HF/DF (high-frequency direction-finding, or Huff-Duff), which started to be fitted to escorts from February 1942. These sets were common items of equipment by the spring of 1943.

- HF/DF let an operator determine the direction of a radio signal, regardless of whether the content could be read. Since the wolf pack relied on U-boats reporting convoy positions by radio, there was a steady stream of messages to intercept. An escort could then run in the direction of the signal and attack the U-boat, or at least force it to submerge (causing it to lose contact), which might prevent an attack on the convoy.

- When two ships fitted with HF/DF accompanied a convoy, a fix on the transmitter's position, not just direction, could be determined. However, the standard approach of anti-submarine warships was immediately to "run-down" the bearing of a detected signal, hoping to spot the U-boat on the surface and make an immediate attack.

- Range could be estimated by an experienced operator from the signal strength. Usually the target was found visually. If the submarine was slow to dive, the guns were used; otherwise an ASDIC (Sonar) search was started where the swirl of water of a crash-diving submarine was observed.

- In good visibility a U-boat might try and outrun an escort on the surface whilst out of gun range.

- Running down the bearing of a HF/DF signal was also used by escort carriers, sending aircraft along the line of the bearing to force the submarine to submerge by strafing and then attack with depth charges or a FIDO homing torpedo.

- The British also made extensive use of shore HF/DF stations, to keep convoys updated with positions of U-boats.
High-frequency direction-finding

• The radio technology behind direction finding was simple and well understood by both sides, but the technology commonly used before the war used a manually-rotated aerial to fix the direction of the transmitter. This was delicate work, took quite a time to accomplish to any degree of accuracy, and since it only revealed the line along which the transmission originated a single set could not determine if the transmission was from the true direction or its reciprocal 180 degrees in the opposite direction.

• Two sets were required to fix the position. Believing this to still be the case, German U-boat radio operators considered themselves fairly safe if they kept messages short.

• The British, however, developed an oscilloscope-based indicator which instantly fixed the direction and its reciprocal the moment a radio operator touched his Morse key. It worked simply with a crossed pair of conventional and fixed directional aerials, the oscilloscope display showing the relative received strength from each aerial as an elongated ellipse showing the line relative to the ship.

• The innovation was a 'sense' aerial, which, when switched in, suppressed the ellipse in the 'wrong' direction leaving only the correct bearing. With this there was hardly any need to triangulate—the escort could just run down the precise bearing provided, estimating range from the signal strength, and use either efficient look-outs or radar for final positioning.

• Many U-boat attacks were suppressed and submarines sunk in this way—a good example of the great difference apparently minor aspects of technology could make to the battle.

The distinctive HF/DF "birdcage" aerial can be seen at the masthead of HMS Kite
March 1943 - Atlantic

• At this time Doenitz (photo) had about 120 U-boats at sea in the Atlantic. Because of this it was extremely difficult to avoid contact.

• During this month, German U-boats sank more tonnage than any other single month. After March, however, the U-boat began to decline somewhat from the menace that it had been up to then.
Atlantic

• The turning point was the battle for slow convoy ONS 5 (April–May 1943). Made up of 43 merchantmen escorted by 16 warships, it was attacked by a pack of 30 U-boats. Although 13 merchant ships were lost, six U-boats were sunk by the escorts or Allied aircraft. Despite a storm which scattered the convoy, the merchantmen reached the protection of land-based air cover, causing Dönitz to call off the attack.

• Two weeks later, SC 130 saw three U-boats destroyed and one U-boat damaged for no losses.
Atlantic

- Faced with disaster, Dönitz called off operations in the North Atlantic, saying, "We had lost the Battle of the Atlantic".
What became of them?

- **U-101** - 22 ships sunk, 111,673 GRT, 1 warship sunk, 1,190 tons - Decommissioned October 1943 and used as instructional boat.

- **U-109** - 12 ships sunk, 79,969 GRT - Sunk May 1943 in the North Atlantic south-west of Ireland, 47.22N, 22.40W, by depth charges from a British Liberator (86 Sqn RAF). 52 dead (all hands lost).

- **U-208** - 1 ship sunk, 3,872 GRT - Sunk on December 1941 in the North Atlantic west of Gibraltar, 35.51N, 07.45W, by depth charges from the British destroyers HMS Harvester and Hesperus. 45 dead (all hands lost).

- **U-374** - 1 ship sunk, 3,349 GRT, 2 auxiliary warships sunk, 992 GRT - Sunk January 1942 in the Mediterranean south-west of Cape Spartivento, 37.50N, 16.00E, torpedoed by the British submarine HMS Unbeaten. 42 dead and 1 survivor.

- **U-432** - 20 ships sunk, 67,991 GRT, 1 warship sunk, 1,340 tons – Sunk March 1943 in the North Atlantic west of Ireland, 51.35N, 28.20W, by depth charges and gunfire from the Free French corvette Aconit. 26 dead and 20 survivors.

- **U-502** - 14 ships sunk, 78,843 GRT - Sunk July 1942 in the Bay of Biscay 46.10N, 06.40W, by depth charges from a Wellington (172 Sqn RAF). 52 dead (all hands lost).

- **U-553** - 12 ships sunk, 61,390 GRT - last seen by U-465 south-west of Ireland 48.15N, 15.35W 20 January 1943. The boat had reported troubles with its periscope the day before, but was still heading for its operational area and was reported missing on 28 January after repeatedly failing to signal its position.

- **U-558** - 17 ships sunk, 93,186 GRT - Sunk July 1943 Bay of Biscay 45.10N, 09.42W, by depth charges from a US Liberator (19th A/S Sqn USAAF) and a British Halifax (58 Sqn RAF). 45 dead and 5 survivors.

- **U-568** - 1 ship sunk, total 6,023 GRT, 2 warships sunk, 1,850 tons - Sunk May 1942 in the Mediterranean north-east of Tobruk, 32.42N, 24.53E, by depth charges from the British destroyers HMS Hero, Eridge and Hurworth, after being located by a Blenheim (203 Sqn RAF). 47 survivors (no casualties).

• Thanks for your attention.
• As usual there will be no lecture on the first Tuesday in November.