THE White ensign

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ROYAL NEW ZEALAND NAVY MUSEUM JOURNAL

COMMEMORATIVE ISSUE: THE NAVY AND NUCLEAR TESTING IN THE PACIFIC

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NAVY MUSEUM
Te Waka Taonga o Te Taua Moana o Aotearoa

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Deck Plate from HMNZS PUKAKI
PUKAKI's motto: Kua Pukekotai (to become experienced or knowing).

DIRECTOR'S MESSAGE

WELCOME to issue five of The White Ensign.

In 1956 over 500 New Zealand Sailors aboard HMNZ Ships PUKAKI and ROTOITI sailed to Christmas Island in the Pacific Ocean to witness Britain's Nuclear Bomb testing. September this year marks the 50th Anniversary of the last of these tests, code named Operation GRAPPLE.

Late in 1973 the Navy again witnessed nuclear testing in the pacific, this time as political protestors against French Nuclear testing. Finally in 1995 with Operation VALERIAN HMNZS TUI was sent by the New Zealand Government to protest against the last French Nuclear test at Mururoa Atoll.

The Navy was also heavily involved in another twist to the nuclear testing story when, in 1985, the Greenpeace Flagship the Rainbow Warrior was bombed and sunk in Auckland harbour, the Navy was called on to salvage the vessel and to assist police with gathering evidence for the investigation.

In this commemorative issue of The White Ensign we remember 50 years of the Navy's involvement in nuclear testing in the Pacific both as witness and as protester.

I am also very pleased to be able to announce that we have recently received approval to redevelop the Navy Museum at Torpedo Bay. While the approval is tremendous news for the Museum and all our supporters it represents only the beginning of a long road as we now commence the very hard work of developing a new Navy Museum of which we can all be extremely proud.

Our Christmas edition of The White Ensign will focus on the incredible history of Torpedo Bay and also provide every one with the latest news and hopefully some plans of the new development.

DC WRIGHT
Commander, RNZN
Director Navy Museum

Deck Plate from HMNZS ROTOITI
ROTOITI's motto: Takain (Bind Together).

R 2299

ON THE COVER:
Leading Telegraphist Dennis Horne's Crossing the Line Certificate - HMNZS ROTOITI 1957.

TKK 0006

All members of the Ships Company who participated in the H-bomb tests at Christmas Island 1957-58 were given a Pewter Tankard with Operation GRAPPLE badge on front.

AAO 0029

BACK COVER PHOTO:
Testing for radiation hot spots after bomb detonation. HMNZS PUKAKI c1957.

THE White ensign
ROYAL NEW ZEALAND NAVY MUSEUM JOURNAL

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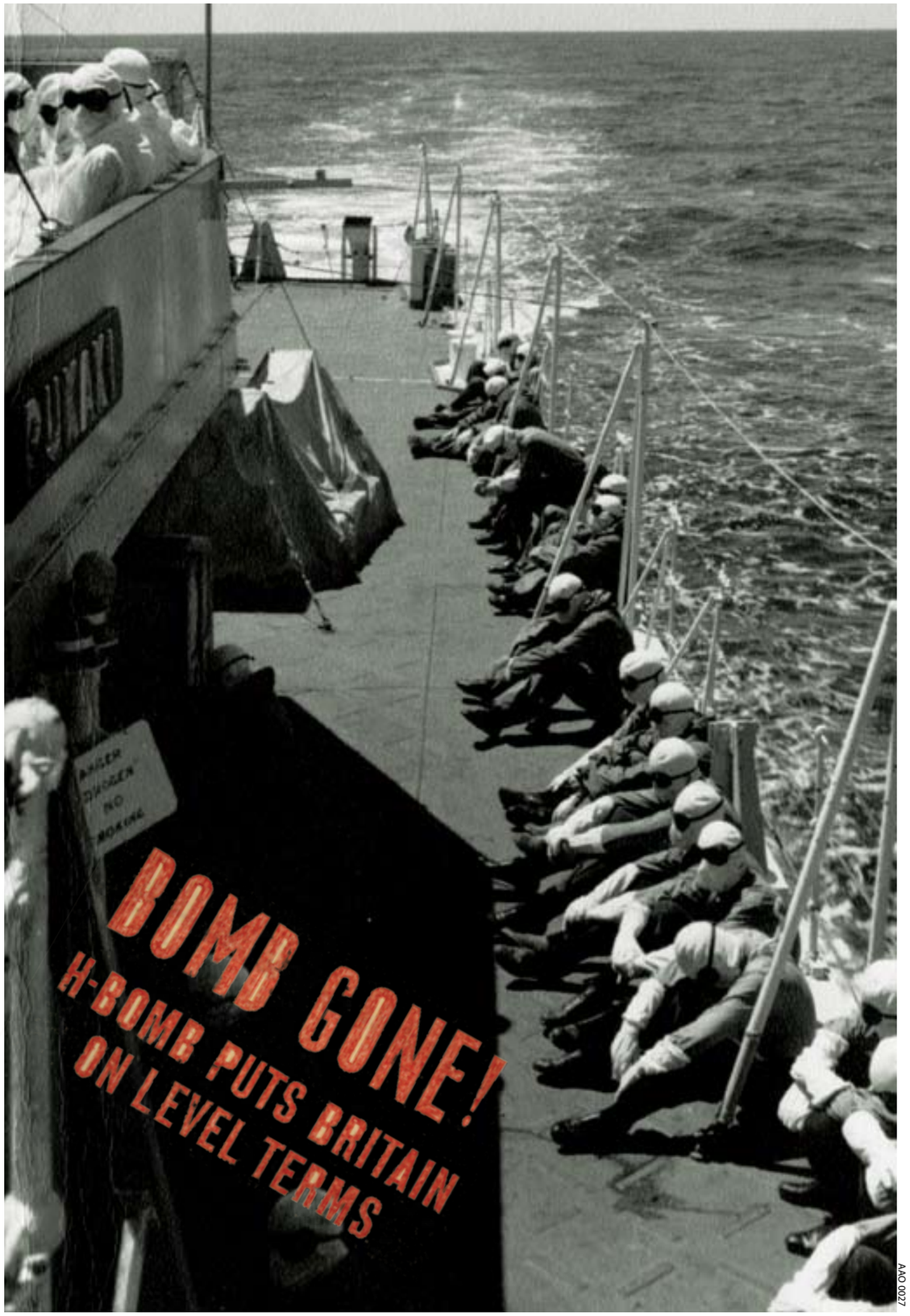
SLF 0002

Unofficial homemade flag - HMNZS CANTERBURY 1973.



AAO 002Z

ABOVE: 15 May 1957, HMNZS PUKAKI, crew seated on the deck awaiting the atomic blast.

CODE NAME: Operation Grapple

Britain's Development of the Nuclear Bomb

When the USA dropped atomic bombs on Hiroshima and Nagasaki in Japan in August 1945 to end World War 2 in the Pacific, they made the possession of nuclear power a major requisite for Great Power status in the post-war world. The British, no less than the Russians and French, scrambled to close the alarming nuclear gap that had been opened by the Americans and so began a nuclear arms race that was the very essence of the Cold War. There in lay the seeds of Britain's Operation GRAPPLE in the South Pacific.

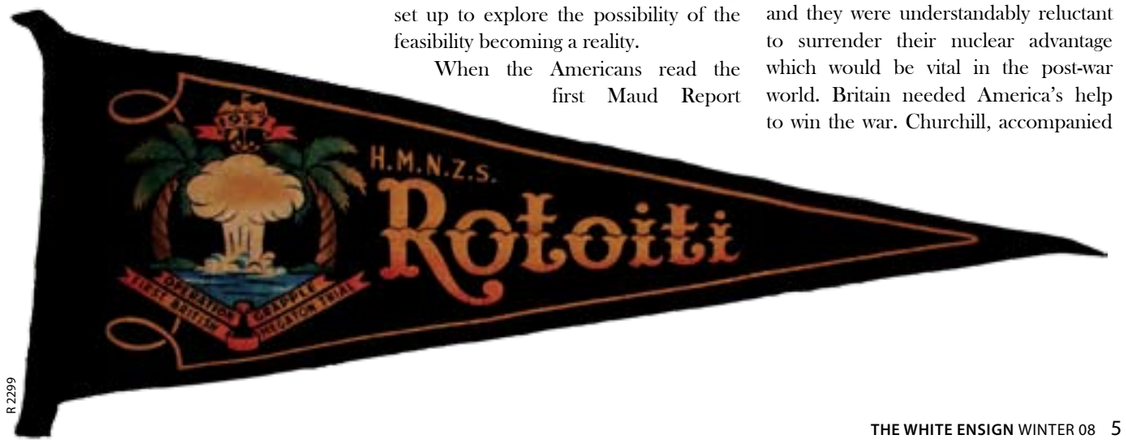
G.Wright Private Collection

ABOVE: Christmas Island 1957.
BELOW: Pennant from HMNZS ROTOITI.

ALLIES AT ODDS

Britain's scientists had long conceived of the concept of nuclear power and were committed to the development of nuclear weapons but it was not until two nuclear scientists at the University of Birmingham published a paper in 1940 theorising on the source of the fast chain reaction necessary for an atomic bomb, that the concept became a feasibility. The Maud Committee was immediately set up to explore the possibility of the feasibility becoming a reality.

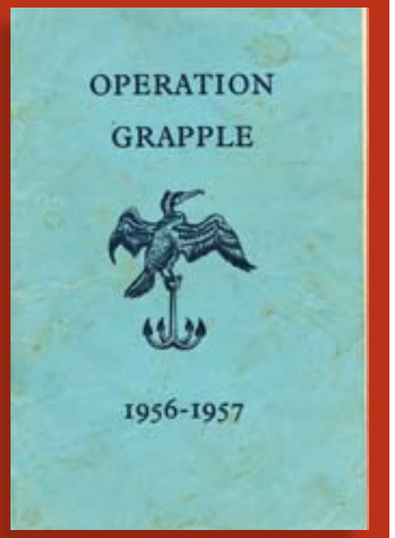
When the Americans read the first Maud Report they were impressed at how technically advanced the British were and pressed Roosevelt to set up the Manhattan Project and propose a joint collaboration with the British. Britain's chilly response was ironically at odds with what later transpired but they were concerned at the ability of the Americans to keep secrets. They were uneasy about America's neutral position in the war at that point and they were understandably reluctant to surrender their nuclear advantage which would be vital in the post-war world. Britain needed America's help to win the war. Churchill, accompanied ▸



R 2299

Successful testing of Britain's megaton range nuclear weapons during Operation GRAPPLE required the cooperation of the three military services and civilian scientists. These four main arms are symbolised in the 4-pointed grapnel carried by a cormorant. The cormorant is a symbol frequently used for inter-service cooperation.

This booklet was created for the information of the men who worked on Operation GRAPPLE. The introduction by Task Force Commander Air Vice-Marshall W. E. Oulton suggests it would "serve as a pleasant souvenir of what must surely be one of the most interesting periods of your lives."



LEFT: PUKAKI Operation GRAPPLE funnel Insignia
ABOVE RIGHT: Souvenir Booklet for men serving in Operation GRAPPLE, published by the British Government c1956.

by his daughter, travelled to America to request Franklin Roosevelt to come into the war.

PEARL HARBOUR BOMBING GALVANISES AMERICA

The American and British roles were dramatically reversed by the Japanese bombing of Pearl Harbour in December 1941, committing America to the war and the atomic bomb. Roosevelt poured vast quantities of money, materials and manpower into the Manhattan Project against which a war-torn Britain could not compete. Churchill's formidable diplomatic skills were needed to persuade Roosevelt to give British scientists the opportunity to join the Manhattan team at Los Alamos in a desperate bid to build the bomb before the end of the War. Though the British scientists on the Project were 'compartmentalised' by the Americans and prevented from getting an overall view of the work on the bomb their contribution to the Hiroshima bomb was vital and they returned home with a working manual on how to duplicate the American atomic bomb.

GUARDED ANGLO-AMERICAN COOPERATION

By the end of 1945 the 'special relationship' between Churchill and Roosevelt had soured as Truman determined that America must retain its nuclear monopoly. They were suspicious of the socialist Government of Atlee and could see no political advantage in continued collaboration with a poor relation. The McMahon Act of 1946 made it illegal for Americans to pass information to another country on pain of death. Britain was now in the bomb making business by itself.

GREAT POWER STATUS

The decision to proceed with the building of Britain's independent nuclear deterrent was made in January 1947. It was a highly secret project under the direction of William Penney and the costs were hidden. Reliance on the Americans for nuclear power was to ensure second-class status. 'Like native levies who were allowed small arms but not artillery' said Lord Cockcroft, the Head of the Atomic Research Establishment at Harwell.[1] The project was given greater impetus with the developing Cold War.

MONTE BELLO ISLANDS TEST SITE IN AUSTRALIA

The priority was to explode a nuclear device as soon as possible. Britain needed an isolated test site large enough to conduct twelve tests, with no human habitation within 100 miles downwind of a detonation and where prevailing winds would blow contamination out to sea but not into shipping lanes.

In early 1952 Australia's pro-British Prime Minister, Robert Menzies, keen for Australia to start a nuclear energy programme of their own, readily agreed to allow Britain's first atomic bomb test to be conducted on the uninhabited Monte Bello Islands off Australia's north-west coast. He assured Australians that 'the test...will be conducted in conditions which will ensure that there will be no danger whatever from radioactivity to the health of people or animals in the Commonwealth'[2] whilst neglecting to mention that it was probably the first test in an ongoing programme and would leave the islands uninhabitable for years.

Britain exploded its first A-bomb at Monte Bello at 9.15am on 3 October 1952 amidst great secrecy and urgency. It went faultlessly. Britain had joined an exclusive club but had singularly failed to impress its members for only a month after Monte Bello the USA exploded her first H-bomb followed by the Soviets in August 1953. It was, however, the beginning of Britain's programme of atmospheric nuclear tests that was to end with Operation GRAPPLE Z on the 23 September 1958.

NEW TEST SITES NEEDED

The original test-site on the Monte Bello Islands proved to be unsuitable. A further two new test sites were developed at Maralinga and Christmas Island. An aboriginal place name, Maralinga portentously translates as "field of thunder".

1 Denys Blakeway, Sue Lloyd-Roberts, Fields of Thunder: Testing Britain's Bomb, London: Unwin, 1985, p. 85.

2. Ibid, p.165

The test site at Maralinga was completed in early 1956 at a cost of five million pounds. At the same time construction had already begun at Christmas Island.

DEVELOPING A BRITISH H-BOMB

Britain decided to manufacture its own H-bomb in June 1954 as the Americans and the Russians had already developed and tested their H-bombs. They got a "bigger bang for their buck" as the H-bomb was cheaper to manufacture than the A-bomb. The original Test Agreement with the Australians had specifically excluded hydrogen weapon testing on the Australian mainland so the hunt was on for another testing ground. The requirements for the new site were British ownership in the largest area of sea with the least number of adjacent land masses and the least number of people.

The finger fell upon Christmas Island, the Pacific's largest atoll, a 1000 miles south of Hawaii and 1500 miles north of Fiji, and adjacent to Malden Island.

The British H-bomb Tests on Christmas Island were code-named Operation GRAPPLE. The 4-pointed iron grapple symbolizing inter-service co-operation on the project – Army, Navy, Air Force and AWRE, the Atomic Weapons Research Establishment. 1957-1958 saw direct New Zealand Navy involvement in nuclear testing when RNZN sailors were deployed at the request of the British to witness nuclear testing off the coasts of Christmas and Malden Islands in the Pacific Ocean. These tests were the final block carried out by Britain in Australia and the Pacific. 551 men and two frigates (HMNZS ROTOITI and PUKAKI) comprised New Zealand's contribution. Their official duties were to witness the explosions and collect weather data, although some New Zealand sailors also monitored the test area for Russian and American spy-subsmarines.

The first bomb was dropped from a Valiant bomber at 13000 feet on the 15 May 1957. Many who witnessed the blast were astonished and terrified by its power. William Oates, a storeman on the island recalled: 'Probably the thing that scared me the most was not the ball of flame in the sky, nor the searing heat but the blast and shockwave which followed later...I saw grown men at their wits end trying to run away from the blast.'[3]

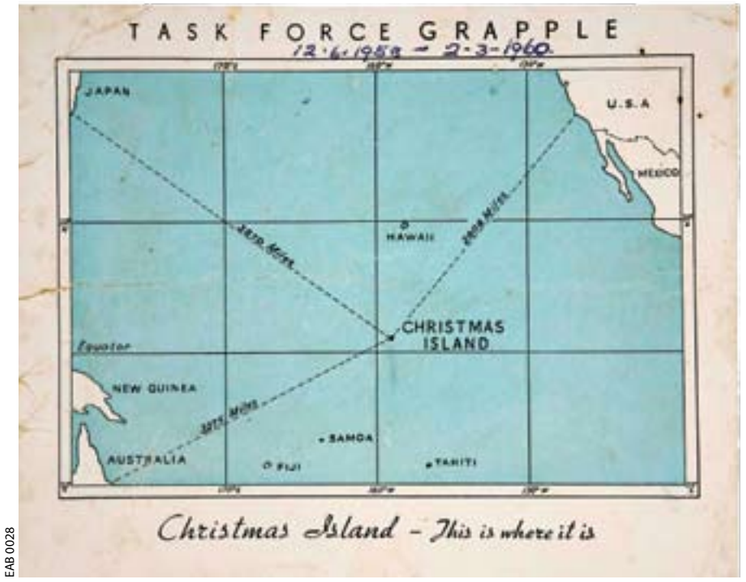
3 Denys Blakeway, Denys, Sue Lloyd-Roberts, Fields of Thunder: Testing Britain's Bomb, London: Unwin, 1985, p. 165.


AAO 0028

ABOVE: Scrubbing the decks in overalls and gas masks, the PUKAKI crew attempt to remove radioactive fallout.

Operation GRAPPLE ended in September 1958 and just in time as Britain joined the USA and the USSR in the next month in a moratorium on nuclear testing. Britain never tested in the open again but Christmas Island was back in business by 1962 as a test site for the Americans.The moratorium collapsed when the Soviets began testing again in 1961 and Britain lent their test site to the USA for a series of 25 tests called Operation DOMINIC which they used to refine their Polaris missiles. When Britain then purchased these Polaris missiles from the Americans they effectively ended their own independent nuclear deterrent by becoming reliant on the USA for supply thus denying the original objective of their nuclear programme since the end of World War 2. ■

"Britain was now in the bomb making business by itself"



EAB 0028

ABOVE: Christmas Card from HMNZS ROTOITI 1957

RUSS GLACKIN

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Ministry of Defence, Operation GRAPPLE 1956-1957, London: HMSO, 1958.

Wright, Gerry, We Were There: Operation GRAPPLE, New Plymouth: Zenith Publishing, n.d.

HMNZS PUKAKI AT GRAPPLE YANKEE

As told by Arthur Venus

Nicola Payne

AAG 0012

ABOVE: After experiencing the blast and after shock, sailors aboard PUKAKI look to ground zero.
LEFT: Arthur Venus 2006, holding a portrait of himself as a young naval rating.

Time 0930 hours (H-30)
Monday 28 April 1958

Arthur Venus, Yeoman of Signals, mustered with the Ship's Company of HMNZS PUKAKI as the vapour trail from the Vickers Valiant carrying the test bomb loomed over the horizon on its test run to the south-east of Christmas Island. He was on the bridge as the Captain slowed the ship to a stop, eighty miles east of Ground Zero. The ship's company mustered on the upper deck with only the engine and boiler rooms running as the ship went to the highest damage control state. Everyone was wearing Action Working Dress and anti-flash hood with gloves. When the warning order came by tannoy[1] from the bridge, trousers were tucked into socks and shirt cuffs into gloves. A grim tension grew with a silence that slowly spread across the ship as the Valiant bomber turned into its final run. Quietly the H- and then H+ countdown began from the bridge ...

10 ..... 9 all the ship's company shuffled nervously on deck and
8 ..... 7 sat down against the rail or a bulkhead with their backs to Ground Zero
6..... 5 at 40 seconds, hands over closed eyes after a last look at the fast-closing vapour trail
4..... 3 tension spread with the silence over the ship .... This was it!
2 1

0 "Bomb exploded!"
rang out from the bridge.

1 ..... 2 Arthur Venus felt a warm breeze that seemed to sweep through his body
3 ..... 4 a dull, thudding noise like a jack-hammer ran across the sea at him ...
5 ..... 6 the bones of his fingers were visible through his closed eyes.
7 ..... 8 As tension expired the silence was broken ....
9 ..... 10 the command from the bridge ... " stand up and turn around."

The quiet was broken with a range of expletive. Arthur Venus turned around and looked up "... and there was this fireball growing larger and swirling all the time" [2] glowing intensely with all the deep hues of red tinged with grey around a glowing hot centre as it rose into the sky trailing a strikingly white water-spout that darkened as it sucked up sea-water. To Arthur Venus it seemed to be almost over the ship as it turned into an ever-expanding column of smoke with tinges of red around the edges. Within minutes the gigantic fireball was a towering mushroom cloud, spotlessly white but going dirty as it continued to suck up water "which it was not meant to do as it was supposed to be much higher."[2] Arthur reckoned it to be much closer than the 200 miles "officially" stated by the Chief of Naval Staff. At H+8 "standby for the blast wave" and then the double crack of the explosion, like a double-barrelled shot-gun blast, came racing across the water. The cloud stalk started to fall away as the high upper winds flattened off the mushroom cloud which then began to open out like a massive smoke ring.[3]

The weapon, codenamed Grapple YANKEE, exploded at 7,000 feet with a yield of 3.0 Megatons, 20,000 times more powerful than the Hiroshima bomb in 1945. It was the largest British nuclear weapon ever tested in the atmosphere.

HMNZS PUKAKI had departed Auckland on the morning of Friday 14 March sailing for Raoul Island, Fiji, Rarotonga and Christmas Island. Arthur Venus sailed out secure in the Admiral's injunction not to ... "worry about it. You won't be within 200 miles of the bomb."[4] He also recalls that "[the ship's company] were told that the bombs were clean and that monitoring teams on the ships up to that point had discovered almost no radiation."[5] It was an uneventful voyage characterised by all the routines of shipboard life at sea but interspersed by internal preparations, drills and exercises relating to shutting the ship down when passing through a nuclear fallout area. Action stations and Damage Control states were practised regularly with the addition of "shelter stations" which simulated the ship being caught in nuclear fallout. Everyone was taken below the water-line to avoid horizontal radiation which meant closing down the external air supply, re-circulating the air within the accommodation area or citadel and squeezing everyone into the confined areas of the magazines and storerooms. The upper deck hoses were turned on to wet the decks prior to the test and then the ship was covered in a shower of spray post-testing to wash away any fallout before monitoring teams in white overalls, face masks and breathing gear searched for radiation hot-spots. The crew regularly exercised in their Action Working Dress with anti-flash gear to prepare them for fallout in the test area. It all became serious when the ship entered the Grapple Restricted Area.

PUKAKI's primary task at Operation GRAPPLE was in response to the British government's request for two frigates for weather reconnaissance and reporting which would be supplemented by RAF Canberra aircraft making high and low level flights to produce observational reports. Ideal test requirements demanded weather conditions that ensured the mushroom cloud would disperse over nearly 5,000 miles of empty sea away from Pacific Islands and Japan. Weather balloons were launched every six hours from the balloon hut on the upper deck and the tracking terminated when the balloon burst at over 70,000 feet [21 km]. Routine weather balloon runs continued for a time after the tests to monitor the on-going situation.

After the bomb was dropped on Monday 28 April, the mushroom cloud spread over PUKAKI and far beyond as weather balloon runs continued until midnight. On Tuesday morning the ship passed through Ground Zero and took water samples on its return to Christmas Island. Arthur Venus remembers the Captain commenting on their return to the Island that the explosion ..." must have been close to here as all the vegetation is burned."[6]

With the test completed and assessed as a successful detonation, HMNZS PUKAKI set off for New Zealand on Thursday, 30 April and arrived in Auckland on Sunday, 18 May. ■

RUSS GLACKIN

The weapon, codenamed Grapple YANKEE, exploded at 7,000 feet with a yield of 3.0 Megatons, 20,000 times more powerful than the Hiroshima bomb in 1945

ABOVE: Deck Plate from HMNZS PUKAKI which served on Operation GRAPPLE.
LEFT: Mururoa Mushroom cloud.

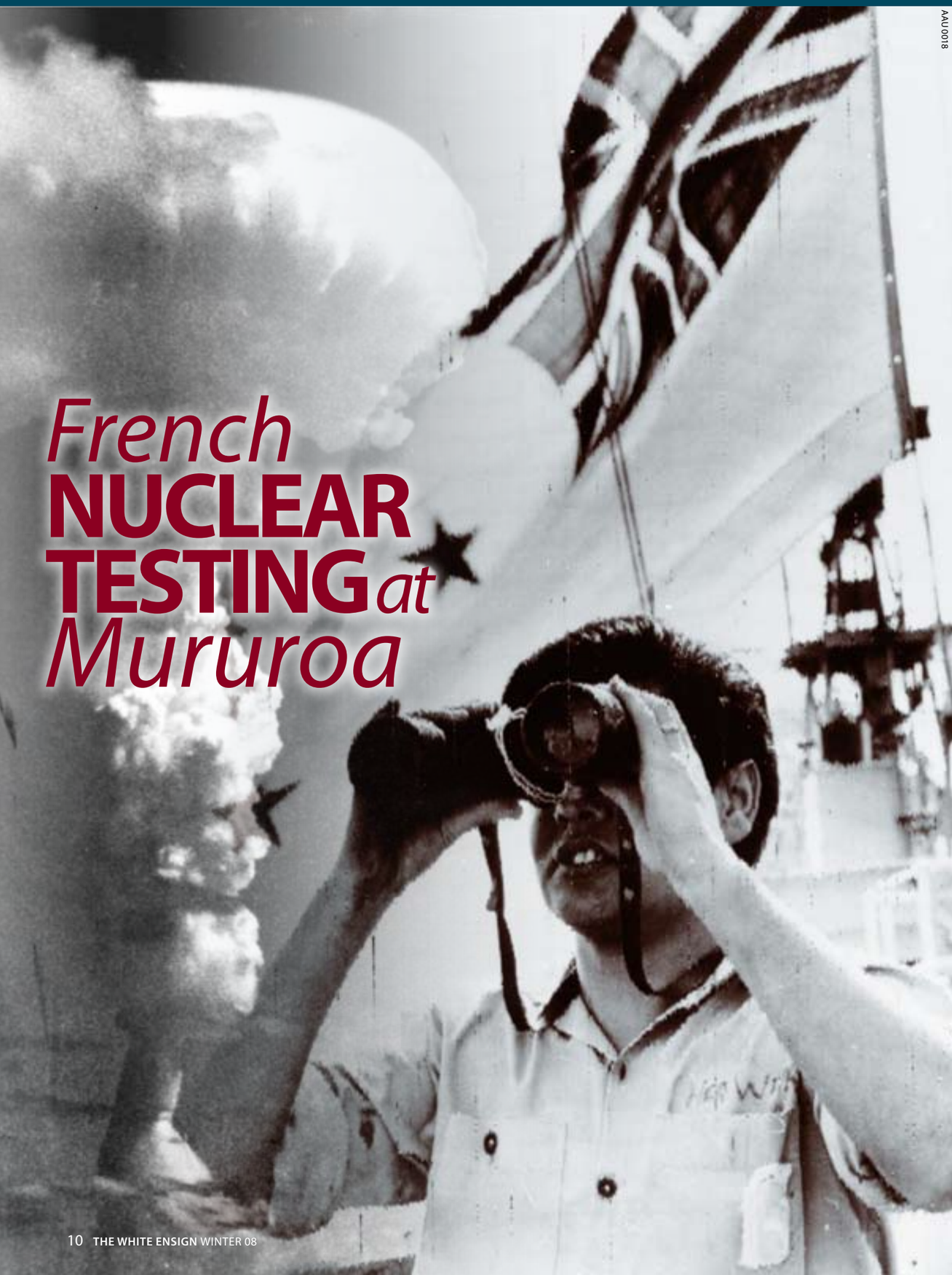
REFERENCES:
DLA 0229 Chief Signal Instructor A.C. Venus Oral History, RNZN Museum
Gerry Wright, We Were There: Operation GRAPPLE, Privately Published, 2000.
Russell Glackin interviewed Arthur in his home in June 2008.

1 Tannoy: A British generic term for an outdoor public address system, originally was made by the Tannoy Company.

2 DLA 0229 p20
3 DLA 0229 p20
4 DLA 0229.p20

5 DLA 0229. p20.

6 DLA 0229.p20



French NUCLEAR TESTING *at Mururoa*

The Royal New Zealand Navy played a significant role by sending a frigate to protest French nuclear testing in the Pacific in 1973. It is a unique act in New Zealand's political history. It showed how much the government had changed its views from participation in the 1950s with Operation GRAPPLE to outright opposition. It was also a unique situation where a warship was sent to operate off a colony not as an act of war or provocation, but as a political protest.

THE FRENCH TESTS

France sought to defend its strategic interests by developing an independent nuclear arsenal. Force de frappe was France's protection against the threat of Soviet invasion. France needed to test its bombs and initial testing was conducted at the Reggane Firing Ground in their colony of Algeria in February 1960.[1] An improved location was needed because of the unfortunate habit nuclear explosions have of sucking up tonnes of debris and then dumping them downwind as radioactive fallout.[2] When Algeria was granted independence in 1962 and banned testing on the site an alternative became essential.

NEW PACIFIC TEST SITE AT MURUROA

In 1963 the French government decided to move their atmospheric testing programme to Mururoa Atoll in the Tuamotu Archipelago beginning July 1966 under the control of Direction des Centres d'Experimentation Nucleaires (DIRCEN).[3] A base for the testing administration and stores complex for ships and aircraft was constructed at Hao Atoll, 270 miles northwest of Mururoa.

1 French Nuclear Testing in the Pacific: International Court of Justice Nuclear Tests Case New Zealand v. France, Wellington: Ministry of Foreign Affairs, July 1973, p. 9
2 Gerry Wright, We Were There: Operation GRAPPLE, New Plymouth, Zenith Publishing, n.d., p. 16.
3 French Nuclear Testing in the Pacific: International Court of Justice Nuclear Tests Case New Zealand v. France, Wellington: Ministry of Foreign Affairs, July 1973, p. 9.

LEFT: Amid a flotilla of International observers and intelligence gatherers at Mururoa, New Zealand's HMNZS OTAGO proudly flew the White Ensign.
OVERLAYED IMAGE: 3 minutes after detonation.

NEW ZEALAND APPEALS TO INTERNATIONAL COURT OF JUSTICE

The New Zealand government first formally expressed its concern at the proposed testing programme in 1963 with representations to the French government, the process continuing through diplomatic channels and inter-governmental meetings up to the end of 1973. The main objection to the French Testing Programme was the hazard from fallout to the people of New Zealand, the Cook Islands, Niue, and Tokelau Islands.[4] New Zealand had monitored the testing and had recorded fallout over all these areas despite the French attempts to mitigate the effects of the tests and the supposed 'safer' location.

France declared a prohibited zone around Mururoa Atoll and Hao Island in 1965 but it also declared 'Dangerous Zones' during the tests themselves. These were not fixed and could be of any size and shape dependent on the test and French concerns. By 1972, the French Navy and Air Force operating from the test site were actively interfering with foreign shipping.[5]

Prime Minister Norman Kirk's letter to the French Government in March of 1973 claimed that continued French atmospheric testing was a "violation of New Zealand's rights under international law"[6] and sought an assurance as to when the testing programme would end. France demurred and strongly contested the assertion. The New Zealand government then advised that it would seek legal remedy under international statutes via the International Court of Justice. By May 1973 New Zealand was firmly convinced that French atmospheric testing was unlawful and sought other means parallel to the legal avenue of protest at the risks these tests posed.

GOVERNMENT SENDS FRIGATE

During the 1972 elections the Labour Party indicated that if elected it would send a frigate to Mururoa with a Cabinet Minister aboard in order to further the protest against French atmospheric testing. Between November 1972 and June 1973, Naval Staff worked on the operational plan for a frigate to sail to Mururoa to protest the next series of testing starting in July 1973. A frigate would need fuel which necessitated a supply vessel. The problem was solved with the help of Bob Hawke, then leader of the ACTU[7] who successfully pressured the Australian Government to lend the tanker HMAS SUPPLY as the support ship for the RNZN frigate. The RNZAF and the RAAF would airlift supplies to Rarotonga for uplifting and replenishment of the RNZN frigates at sea.

4 ibid., pp. 9-10.
5 ibid., p.11.
6 ibid., p. 10.

The two frigates available for this operation were HMNZS OTAGO which was undergoing a self-maintenance period and HMNZS CANTERBURY. However, CANTERBURY was committed to a working up period with her new crew and would not be available until July 1973. OTAGO would be deployed first and would embark Fraser Colman the selected Cabinet Minister and three representatives of the media.

PEACE SQUADRON

As in 1972 a fleet of private craft was sailing to Mururoa and this Peace Squadron was very disappointed that HMNZS OTAGO would not act as a mothership for them. The government was concerned the French would ask the OTAGO to remove the craft from the prohibited zone resulting in negative publicity. On 22 June 1973, the International Court of Justice supported New Zealand's application for interim measures to halt the tests but the dates for exchanges of memoranda between France and New Zealand were set well after the completion of the testing programme. France proceeded with the 1973 plans.

ACTIVE OPERATIONS BY THE RNZN

The first vessel deployed by the RNZN was HMNZS LACHLAN. She conducted signal intelligence gathering and spent the period from 21 June to 1 July 1973 steaming off Rarotonga tracking and eavesdropping on French Radio communications, under the direction of Lieutenant-Commander Dennis Milton. He had embarked aboard especially for this purpose having been involved in communication intercepts since 1944.

The Commanding Officer, Commander Ian Munro calculated the bearing from Waiouru to Mururoa Atoll for HMNZS IRIRANGI, so that the directional aerials could be directed to listen into the French communications. LACHLAN also refuelled at sea from RFA ▸

7 ACTU: Australian Council of Trade Unions

AAU 0206

ABOVE : Testing for radiative fallout post nuclear test. HMNZS OTAGO c1973

(Royal Fleet Auxiliary) TIDEFLOW. Nevertheless the British made it very clear to the New Zealand government and the RNZN that they were not supporting the New Zealand protest action.[8] On 2 July 1973, HMNZS LACHLAN returned. A course had been set to avoid HMNZS OTAGO so that LACHLAN's part in obtaining signal intelligence was kept from the media contingent aboard OTAGO.

HMNZS OTAGO SENT TO MURUROA

Prior to departure the Ship's Company was offered the chance to opt out of sailing with OTAGO and 22 took up the offer. No officers or operation specialists opted out.

When on deployment to Mururoa the vessel would be under the direct control of Rear Admiral E.C. Thorne C.B., C.B.E., Chief of Naval Staff (CNS), who in turn reported directly to Lieutenant-General Richard Webb, Chief of Defence Staff[9] who took his direction from the Kirk government. The directive given to the Commanding Officer Commander Alan Tyrrell[10] of OTAGO was not to be shared with his subordinates. Due to the fact this was a political operation he was not given any leeway to manoeuvre. Commander Tyrrell was a good choice having participated in Operation GRAPPLE aboard the Loch-class frigates.

There were three parts to the orders:

RULES OF ENGAGEMENT (ROE)

1. Written authority to fire upon French vessels in self-defence if the need arose. OTAGO had orders to fuse its shells[11] for the voyage to the exclusion zone.

2. The action to be taken if the OTAGO was severely contaminated by fallout and the procedure for seeking medical assistance from the French.

3. Details of a secret communications safety circuit with the French authorities to avoid a direct hazard to the New Zealand frigate.

Fraser Colman was selected as the Cabinet minister to sail in OTAGO. At the date of departure on the 28 June, Norman Kirk at a dockside press conference stated 'this is a mission of purpose' and the voyage of OTAGO would 'ensure that the eyes of the world are riveted on Mururoa'. On 29 June OTAGO made rendezvous with HMAS SUPPLY and they proceeded in company northwards to Mururoa. Wind-direction balloons were released and tracked with the fire-control radar so OTAGO would be able to measure patterns of fallout. The crew was kept busy undertaking NBCD (Nuclear, Biological, and Chemical Defence) exercises every day.[12]

OTAGO received orders to pass into the French-declared 'Intermediate Zone' on 4 July, with instructions to contact by Morse code twice a day an unidentified radio station, it was discovered later this was the safety link to the French authorities. When France stated that it would proceed with its tests despite the presence of the OTAGO, Norman Kirk assured them that the frigate would not enter French territorial waters but rather what the French called their 'danger zone'.

A French P-2 Neptune maritime patrol aircraft made several passes over the OTAGO on 6 July, but there was no communication. France then advised it was activating the test zone equal to 72 miles around the test site, the area that OTAGO would be entering. Two days later a French Dunkerque-class minesweeper appeared three miles off the stern of OTAGO and shadowed the ship until contact was broken when OTAGO changed course.

OTAGO would sail into the zone until 23 July maintaining a course to avoid territorial waters but would sail in and out of the zone rendezvousing with HMAS SUPPLY to replenish fuel and provisions. French surveillance continually photographed OTAGO until about July 14.

Personnel from two French frigates boarded the protest yacht Fri and took it under tow to Hao Atoll. OTAGO made preparations in case the French sought to close with them also. Orders were received from Wellington on Thursday 19 July to proceed closer to Mururoa Atoll as a test was about to occur. OTAGO began to prepare for the fallout. Fortunately for the men aboard OTAGO, the French countdown frequency had been discovered and was under constant monitoring by the electronic warfare team under the leadership of Lieutenant Commander Jeff Daykin.[13]

'the eyes of the world are riveted on Mururoa' Norman Kirk

INTERNATIONAL INTELLIGENCE GATHERING

The next day, by mistake a United States Navy Sea King helicopter approached the OTAGO. It hurriedly left and landed aboard the USS CORPUS CHRISTI BAY, a helicopter repair ship operated by the Military Sealift command. Along with this there were the RFA SIR PERCIVAL, USSR research vessels AKADEMIC SHIRSHOV and VOLNA plus a Chinese fishing vessel gathering signal intelligence![14] All the major nuclear powers had naval forces acting as observers of the test. In this 'great game' of intelligence gathering only the RNZN was acting in a protest role.

Approaching the territorial limits OTAGO could see a balloon with the device slung beneath it. They were told to prepare for a test the next day. At 0800 local time, the French detonated a device above the atoll at 2000 feet. OTAGO was 21.5 miles west of the detonation. The flash was intense enough that the

8 Gerry Wright, '30 Years Ago: The Navy at Mururoa', The Raggie 17:3 (2003), p.6.
9 The Navy List, Wellington: Ministry of Defence, 29 February 1973, p. 6.
10 ibid., p. 9.

11 Fused shells: Loaded shells were stored without fuses for safety reasons. When going into action fuses were inserted making them "live."
12 Gerry Wright, '30 Years Ago: The Navy at Mururoa', The Raggie 17:3 (2003), p. 6.

13 Gerry Wright, Mururoa Protest, New Plymouth: Zenith Print, 2008, p.149.
14 ibid., p. 152.

"All the major nuclear powers had naval forces acting as observers of the test. In this great game of intelligence gathering only the RNZN was acting in a protest role"

AAU 0706

ABOVE: Fraser Coleman, Minister of Immigration and Mines, poses with his gas mask aboard the OTAGO. He was to prove an indefatigable de-facto correspondent and able communicator.

crew inside the ship's citadel saw it come through the ventilation system. The yield was estimated to be 5.4 kilotons.[15] Commander Tyrrell, the Navigation Officer, the Yeoman of Signals and two reporters were on the bridge equipped with anti-flash gear and dark goggles.[16] OTAGO did not detect any radiation with its sensors; it was not affected by any fallout or other contamination from the explosion. Through a radio-telephone link to Wellington, the news was quickly broadcast to the outside world from the reporters aboard OTAGO. The film footage that was taken would follow in a few days time.[17]

HMNZS CANTERBURY ARRIVES TO CROWDED SEAS

CANTERBURY left Auckland to replace OTAGO on the 14 July she was equipped with the RNZN's first on-board computer nick-named 'Clarence' to monitor the yield of the French bomb and fallout. Despite being hampered by contamination in the port boiler, CANTERBURY rendezvoused with OTAGO on 22 July. OTAGO was ordered back to Mururoa to observe what was thought to be the second test. While CANTERBURY fixed some engineering issues, OTAGO remained on station and moved to a new location for observation. At this point it came across a USN Victory-class intelligence gathering ship, possibly USS WHEELING.[18]

The USN ship avoided any contact with OTAGO. OTAGO transferred equipment, personnel and Fraser Colman to the CANTERBURY. CANTERBURY was then subject to the same level of inspection that OTAGO had experienced from the surveillance planes.

After a delay noted by the CANTERBURY from the radio traffic in the morning of 28 July,[19] a device was detonated at 1032 feet. There were some hold-ups in the countdown and an alarm was sounded that caused the French fleet to sail southwards. CANTERBURY followed in order to avoid the potential fallout zone.[20] The explosion was not heard or seen by men on the CANTERBURY. It was a much smaller yield than the previous test and could not be recorded. Tiny amounts of fallout were recorded and did not pose a danger for the crew. There was some thought that this was a nuclear trigger rather than an operational bomb.

The injured master of the detained protest yacht Fri was taken on board on the 3 August. The next morning orders came from Wellington ordering CANTERBURY home as the release of the yacht Fri was a clear signal that the test programme was concluded for 1973.

AFTERMATH

The French government announced in 1975 that they would end atmospheric testing and move to underground testing at Mururoa. This remained the case until June 1995 when they recommenced testing at Mururoa, finally ending in January 1996. They then signed the Comprehensive Nuclear Test Ban Treaty and to date have not conducted any further testing. Mururoa is still French territory and is treated as a secure site but the facilities have been dismantled and decommissioned. ■

MICHAEL WYND

For Research enquiries fill in an enquiry form on our website: www.navymuseum.mil.nz

15 Gerry Wright, '30 Years Ago: The Navy at Mururoa', The Raggie 17:3 (2003), p. 7.
16 Gerry Wright, Mururoa Protest, New Plymouth: Zenith Print, 2008, p. 156.
17 ibid., pp.159-164.

18Gerry Wright, '30 Years Ago: The Navy at Mururoa', The Raggie 17:3 (2003), p. 7.

19 This was the 32nd test since 1966.
20 Gerry Wright, '30 Years Ago: The Navy at Mururoa', The Raggie 17:3 (2003), p. 7.

Bert Anscombe

Among the Navy Museum's Oral Histories there are recollections from sailors who sailed to the Christmas Island and Mururoa test sites. South Islander Bert Anscombe's personal account gives a good insight into the day to day living conditions of those onboard ship. Young New Zealand sailors, ordinary blokes, away from home, in a new situation and for the most part unprepared for what they were to experience. Bert Anscombe joined the navy as a Boy Second Class in 1952. He was 21 when he travelled to Christmas Island in 1957 as a Signalman in HMNZS PUKAKI. These excerpts are from a new Oral History currently being transcribed at the Navy Museum.

EAB 0032

ABOVE: RNZN Petty Officer Herbert Anscombe.

"I spent the best part of another year in PHILOMEL, and then I was drafted to the Loch class frigate PUKAKI, thus commenced a very happy era in my naval career. The Commanding Officer was Richard T. Hale and he was a man's man. In fact he lives just around the corner from me now. Richard and I are great cobbers. I am the president of the local RSA and he is on my executive committee. We are good friends.

We sailed from Auckland for the Christmas Island nuclear test trials in early `57, and the first series was for five months. We called at Suva on the way up, in company with ROTOITI another Loch class frigate. There was a lot of competition between the two ships, so much in fact, the day that we sailed from Suva, ROTOITI, who was the junior ship to us, following us out through the reef at Suva had loaded up their Squid weapons with bags of split peas. They came right up behind us, much to our dismay and fired these split peas all over PUKAKI. It came down like very hard hail. Having no bridge cover, there was a little bit of ill feeling and quite a few bruises. It was just part of the fun".

"We had been on station for the nuclear tests for about two months. The first test had taken place and that was something that I will never forget. Being so close to an atomic explosion defies all explanation. It was as if the sun had exploded...I will never forget it".

LETTING OFF STEAM

"We stayed on station for the rest of the series, never getting ashore very much. One shore break we did have was on an atoll, and onboard the ship we had several films. We had shown them backwards and had mixed up the reels, just anything for entertainment, to break the monotony, and one of these films was about the knights of old, in the days of King Arthur, and there was the blue knights and the red knights. So we stopped at an atoll and as I say there wasn't even a tree on it.

We went ashore in the cutter and the whaler loaded up with tons of liquid refreshment and everybody got cardboard and anything they could get a hold of, and the port watch of course were the red knights and the starboard watch were the blue knights. We had painted up our armour and our swords made of bits of packing case and anything we could get a hold of in the way of timber, and we had a joust on the beach, after we had consumed the refreshments. The funniest thing you have ever seen in your life. About a hundred sailors fighting and bashing one another on the beach all dressed up as knights of the realm, including the skipper. The next day we were sailing along on our appointed station, no one any the wiser, just within the ship, and seeing us getting around, there were guys with black eyes and bandaged heads and all sorts, but we had let it all out. That was a great idea of our skipper".

> "It looked like our entire universe had just burst into flame, terrifying."

NUCLEAR TEST PREPARATION

"The actual exercise carried out for the nuclear tests...for a start we had to rig the ship for wetting down. In today's navies, most of them have got a pre-wetting system built in. We didn't, so we rigged up our fire hoses to spray water over most of the ship to wash off or de-contaminate nuclear residue.

The next part of our training for the explosions was getting into white suits. They were a very fine nylon. The wearing of anti-flash gloves and headgear, wearing gas mask respirators, so that we wouldn't breathe in radio-active particles, [and] the wearing of the dosimeter, which really looks like the old type bottle opener. It had a reading on it in colour to detect and indicate to the wearer whether or not they had been subjected to radiation fall-out".

THE WORLD ON FIRE

"The first bomb, it just looked like the sky was on fire. The last one of the second series which I was there for, that was the worst of the lot. I was sure that the world had gone on fire. We were 120 miles from it. You could feel the blast, the disposition of air, the noise was horrific and the whole sky it was shocking. I remember thinking I hope Mum can't see this. That is how big it was. It looked like our entire universe had just burst into flame, terrifying. I speak for myself on that one, but I know damn well looking around at some of my shipmates, even hours after the event we were very quiet Kiwis thinking, what the hell do they think they are doing".

RIDING SCOOTERS AT PAPEETE

"At the end of the second series we were sent to Tahiti for a rest. ROTOITI and PUKAKI alongside one another in Papeete. Can you imagine it? We had been locked in these steel hulls for the best part of five months without seeing anybody or landing anywhere. We had money coming out our ears and all these lovely people ashore wanted to entertain us. The funniest thing you have ever seen in your life. The night we sailed we had all hired motor-scooters. They were very cheap to hire and we had a session on the wharf riding these scooters off the end of the wharf, and the locals including the people who owned the scooters thought it was a huge joke. As we sailed they had trucks there with cranes on them rescuing these motor-scooters out of the tide. Quite hilarious".

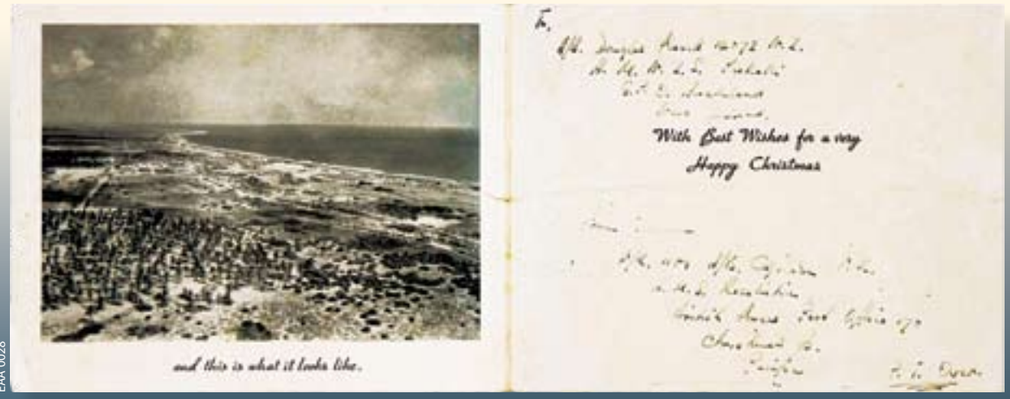
BREAKING THE MONOTONY

"The crew, well we weren't really a crew in the true sense, we were more like a gang, everybody looked after everybody, right from the skipper down. If you had a problem, then it was soon dealt with one way or another, even long distance stuff. We got little mail.

We used to get a weekly news report from Navy Office in Wellington, which was put up on the notice-board, so everybody had some idea of what was going on at home. But other than that during the dog watches playing Tombola (Housie) with our beer issue, and watching movies that we had watched a thousand times before, that was about it. Sometimes especially we had a tropical routine, where you commenced work at 0700 and you finished at 1130, and that was tropical routine. You were free then until the dog watches, unless you were actually on watch. It suited us just fine we had the afternoons to ourselves. We would take a stretcher off out to the upper deck under an awning somewhere and perhaps sleep or write letters."

> "We had shown them backwards and had mixed up the reels, just anything for entertainment, to break the monotony"

"Something I want to add. Sometimes in the afternoons if there was inclement weather or for any reason we were down below, we would sling our hammocks and it wasn't unusual for a voice to come up and say, "I spy with my little eye", and here are all these grown sailors lying in their hammocks playing 'eye spy', just something to break the monotony". ■



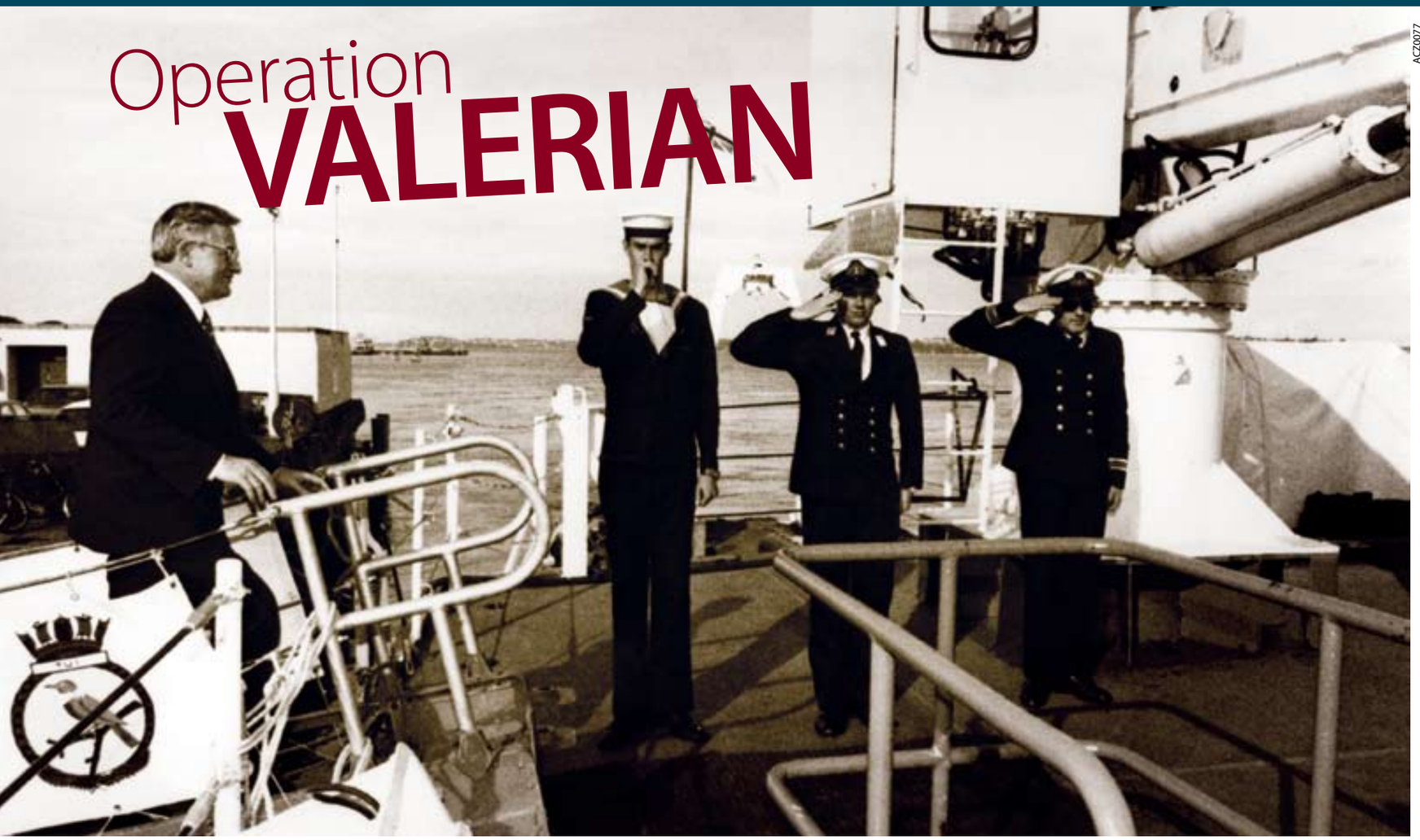
EAA 0028

ABOVE: Task force GRAPPLE Christmas card from HMNZS ROTOITI 1957. They were a long way from home, on a remote Pacific Island and this was for the folks back home. The card is inscribed from the Captain and Officers of the ROTOITI. On the outside, "This is where it is" and inside "and this is what it looks like."
OVER PAGE: Poster shows the mushroom cloud moments after detonation. Christmas Island 1957.

OPERATION GRAPPLE

1956 - 1958

Operation VALERIAN



ACZ0077

ABOVE: In August 1995 both Helen Clark (Leader of the Opposition) and Jim Bolger (Prime Minister) boarded TUI prior to its departure for Mururoa from Auckland. Operation VALERIAN was not only protesting the tests it was officially supporting the protest fleet. A bipartisan initiative, it was well supported by the public.

In May 1995, Jacques Chirac running for the Presidency of France, promised to end the moratorium on testing of nuclear devices if elected. He won the election and announced that between September 1995 and May 1996 there would be a new series of eight tests at Mururoa Atoll.[1] France was pursuing its status as a world power. Two reasons were given for the resumption of testing; firstly to verify the safety and reliability of the devices and secondly to develop warheads with better yield-to-weight ratios.[2] France indicated at the end of the testing programme it would be willing to sign the Comprehensive Test Ban Treaty.[3]

Despite the public outcry in both countries, Australia would not deploy a naval vessel to Mururoa arguing that a naval vessel should be used for naval purposes.[4] The New Zealand government took a different view, there was political and public pressure to do something about the resumption of the testing. It announced that a ship would be sent but would operate outside the 12-mile territorial limit and would offer support to the flotilla of protest vessels.[5] On 18 July Prime Minister Jim Bolger announced that there was broad agreement from all parties to send an RNZN ship to support the protest fleet. HMNZS TUI, an unarmed oceanographic research ship, was to be sent to Mururoa and MPs would travel with it.[6] TUI was able to deploy with no tanker support as she was a slow but long range endurance diesel electric ship.

On July 24 a warning order was issued to Lieutenant-Commander J.F. Campbell, the Commanding Officer of TUI 'for a 70-day deployment to the South Pacific in support of Government initiatives at Mururoa.'[7] Equipment was removed off TUI in preparation for the deployment and to make room for civilian passengers. She was ready on 4 August for Operation VALERIAN, the name given to the operational deployment to Mururoa.[8] The voyage would be under the control of the RNZN with an interdepartmental 'watchgroup' providing guidance on the legal, political, and media aspects of the operation.[9] Technological advances meant it was harder to control the media in 1995 than in 1973, so the government had to monitor news output very carefully. As she sailed to Rarotonga Lieutenant-Commander Campbell had 'some doubt as to the sea worthiness of the two embarked politicians' Chris Carter (Labour) and Brian Neeson (National).[10]

TUI arrived at the 12-mile territorial limit on the afternoon of 24 August. There was great excitement amongst the media representatives and politicians when a French Patrol Craft rendezvoused with TUI to pass along a letter. Following naval protocol was interpreted by the MPs as being 'so openly friendly'. Lieutenant-Commander Campbell was at great pains to explain to the excited passengers that it was a normal mark of respect between navies.[11] The letter welcomed TUI to Mururoa and asked the RNZN to respect the right of the French Navy to protect the sovereignty of this French colonial territory.[12]

> Lieutenant-Commander Campbell had 'some doubt as to the sea worthiness of the two embarked politicians' Chris Carter (Labour) and Brian Neeson (National).

On 28 August the MPs conveyed a letter of protest to the French Navy who had deployed frigates to shadow the protest fleet usually staying some two nautical miles from the yachts. When the protest fleet would gather, they would be surrounded by the French.[13] The MPs at one stage went across to the protest yacht Tryptych and returned to the TUI happy that they had been the guests of the RNZN and not cooped up on a yacht.

On Tuesday 5 September 1995 the first device was detonated. The media contingent went into high gear and the ship's communication circuits were flooded with calls from international media. By the end of the week the media and politicians were clamouring for the TUI to return to Rarotonga. This she did and arrived back on 17 September.[14] After reprovisioning she then departed for Mururoa this time carrying the MPs John Carter (National) and Pete Hodgson (Labour) accompanied by media representatives and civil servants. During the passage damage to the starboard main engine generator halved the speed of TUI and it would be a slow voyage to Mururoa. She arrived at the edge of the territorial waters on 26 September.[15] That afternoon TUI stood by when the yacht VEGA deliberately crossed the 12-mile limit and was boarded by the French and escorted to the atoll. That night there was an incident when a French Patrol craft closed up to the TUI. When Lieutenant-Commander Campbell was contacted the next day by the French Navy he explained that it was the French ship's poor handling that gave rise to the close encounter.[16]

October 1 was a day of action. Yachts from the protest fleet were breaching the 12-mile limit and the French were very active in escorting them out of territorial waters. French Navy personnel also boarded one of the yachts who had launched canoes to land on the atoll. All this activity attracted the media representatives' attention and they transferred over to a yacht where they were discussing when the next test would be. As this discussion continued, the French detonated their second device in the afternoon.[17] TUI did not pick up that the detonation had occurred until the media in New Zealand called them to determine if the French had tested the device. The rest of the time on station was spent relaxing as now the tests had been conducted. On 9 October TUI left the waters off Mururoa but not before the MPs passed another protest letter to the French when TUI met up with a French Patrol Craft. She then sailed for Rarotonga then home arriving to a welcome on 26 October 1995.[18]

The post deployment report indicated that 'from a military perspective, the mission was achieved'[19] The service that TUI provided to the protest fleet was invaluable. The reports of proceedings for the time TUI spent off Mururoa shows that she provided water, fuel, and medical services to the protest flotilla even though that was not her mission. This is another example of the courage, comradeship, and commitment of the men the RNZN sent to monitor another nuclear test by the French. ■

MICHAEL WYND

1 Ramesh Thakur, The Last Bang before a Total Ban: French Nuclear Testing in the Pacific Working Paper No. 159, Canberra: Australian National University Research School of Pacific Studies, 1995, p. 1.
2 ibid., p. 12.
3 ibid., p. 22.
4 ibid., p. 23.
5 Ruth Laugesen, 'Navy may join protest yachts', The Dominion 14 July 1995, p. 1.
6 Sarah Boyd, 'Parties unite to condemn French tests', The Evening Post 18 July 1995, p. 1.
7 HMNZS TUI Report of Proceedings for July 1995, p. 3.
8 HMNZS TUI Report of Proceedings August 1995, pp. 1, 3.
9 EXO 0013 RNZN Minute NA 3440-0015 14 December 1995
10 HMNZS TUI Report of Proceedings August 1995, p. 3.
11 ibid., p. 5.
12 ibid., p. 5. The letter is attached to the report.
13 ibid., p. 8.
14 ibid., pp. 7-8.
15 ibid., pp. 9-10.
16 ibid., p. 11.
17 HMNZS TUI Report of Proceedings October 1995, p. 2.
18 ibid., p. 6. TUI spent 75 days at sea while on Operation VALERIAN.
19 EXO 0013 RNZN Minute NA 3440-0015 14 December 1995

Terry Bruce

Warrant Officer Terry Bruce joined HMNZS PUKAKI in 1958 arriving in time for the second nuclear test at Christmas Island. His role was to track the met balloons to determine the weather for the tests. Commodore G.F. Hopkins interviewed him in 1997 for the Navy Museum's Oral History archives. The following is an extract from this interview.

"I was closed up in the radar shack chasing balloons. In one of the photographs you will see us sitting on the quarter deck with our backs to the bomb and our anti flash on and our knees up. I was one of those. I can remember being out there for one of the bombs. I was there for the big H bomb, I actually saw that one go off. I have got a photograph of that at home somewhere, I will dig it out".

"I did a bit of sailing there actually in the old 14 foot dinghy, on a Saturday or Sunday you would go for a sail and there was these big Manta Rays flopping past and they would appear right alongside you. They never bothered you or anything like that".

"The RN had their own team for blowing up the balloons and letting them go. We did four a day I think it was when I was doing them and two of them used to have a radio sond, so not only did you get to track the balloon for the wind speed and direction you got the temperatures as well. That came straight back to the ship".

"Before the balloon launched you had to set the radar up. They had a special A display built into it for this each range was about 20 miles. To measure the angle of the aerial you would do three cuts, stop in the middle, you would get a bearing, a range and an elevation, which was the bearing, slant range and the elevation at the time. We really had to get the balloon within the first two or three minutes of its launch for it to be effective because they rose at something like a thousand feet a minute and so you had the 277 radar barreling around flat to the boards and the Officer of the Watch on the bridge would be reading off bearings and slant ranges using his sextant, so that you could get on the 277. As soon as you got it, it was stopped and you didn't lose it from there on, I found it quite easy to hang on to. It didn't auto track. It was all handraulic, the whole lot was done by hand, both revolving and the elevation was all done by hand and running your little range marker off as well. So you were quite busy sitting there. Then of course every minute you had to report to the ops room on the minute and so you are watching the clock doing this. The longest balloon run took 119 minutes, 1,000 feet a minute and so that was 119,000 feet. Gerry Wright and I did this 4 times a day in the days running up to the actual bomb drop."

"We were usually out to the east of Christmas Island when they did the drops. The first lot were at Malden Island or whatever it was, but from there on they were on Christmas Island. The second and third lot of bomb tests they were actually exploded from towers, they weren't dropped from aircraft, the A bombs were actually up towers on Christmas Island. They bombed their base and runway place too, because one of the trips we came back from there, we came around the bottom of the island back into the bay where it was all blackened and flattened and we just shot in there and took on provisions and were gone. That is when we came home, after the first whack that I was up there, we shot in and shot home and we went back up again about two months afterwards for the next whack or the last whack".

"I didn't have a lot to do with the bomb drop. We had a rundown given to us from the bridge about what was happening and we could actually see the Canberra aircraft, because they were painted white and you could see them in the blue sky when they were doing their runs prior to bomb drop. Everyone was out on the upper deck they would say the next run would be the firing run and they would just broadcast it on board the ship as the aircraft was coming in. You would be told to turn your back to the bomb, sit down or whatever it was that you wanted to do, close your eyes, put your hands over your eyes as well and then it would be bomb gone, 5,4,3,2,1, bomb burst and whoof, a brilliant flash, it didn't matter that your eyes were shut and your hands were over them. No anti flash gear, we were only in number eights, out on the upper deck". ■

REFERENCE

WOS T.A. Bruce MSM , DLA161

AAU0702

ABOVE: Weather Ballon being released from HMNZS OTAGO at Mururoa in 1973. Weather balloons helped detect wind direction to avoid nuclear fallout and were used at both Christmas Island and Mururoa.

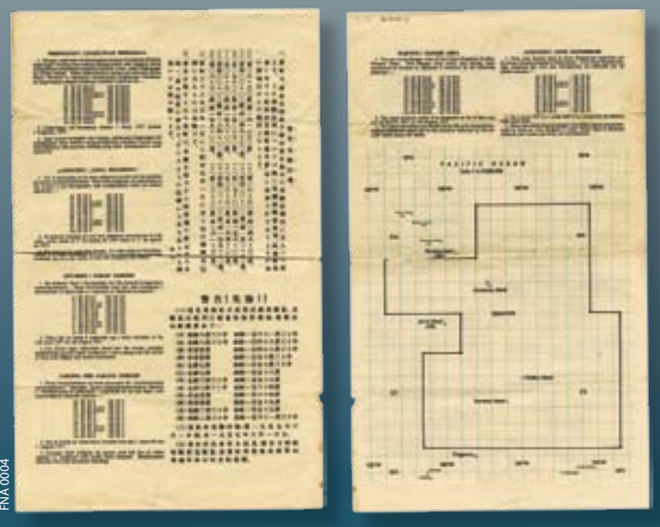
LEFT: Warrant Officer T.A. Bruce receiving the Meritorious Service Medal from CNS Rear Admiral C.J. Steward CB, CBE 27 January1986.

R2299

LEFT: Envelop fragment sent from Leading Telegraphist Dennis Horne, HMNZS ROTOITI 1957.

BELOW: Ships Company who participated in the H-bomb tests at Christmas Island 1957-58 were given a Pewter Tankard with Operation GRAPPLE badge on front. Close up of badge on previous page.

TKK0006



FNA 0004

WARNING LEAFLET, 1957

This leaflet was dropped by air, warning fishing boats and people living on nearby islands and atolls that there was to be a prohibited zone around Malden Island during the British nuclear tests. None of the translations were in a Pacific Island language. 1957.

The leaflet states:

1. You are in the Danger Area of the United Kingdom Nuclear Weapon Tests…

2. The dates between which it is dangerous to be in this area are 1st March, 1957 to 1st August, 1957.

3. For your own safety you should leave this area immediately, making maximum speed and in the direction indicated by the aircraft which drops this leaflet.

GERRY WRIGHT

On July 6 1973 The (Christchurch) Press reported Prime Minister Norman Kirk's response to France's intention to proceed with the nuclear tests at Mururoa.

"President Pompidou has indicated to me that it is France's firm intention to go ahead with the tests at Mururoa"… "Commander Tyrrell's orders are being amended and the OTAGO will be authorised to enter the test area."

President Pompidou had rejected the World Court's competence in matters relating to nuclear testing. Kirk replied "In saying this the President seems to have overlooked a long established rule of international law that it is for international tribunals to decide whether they have competence and not for the parties that appear before them."

Gerry Wright was Operations Officer aboard HMNZS OTAGO when she went to protest the tests at Mururoa in 1973. Here are some excerpts from his Oral History...

..."we would listen in on anything. I think, more just out of background interest, because we couldn't pick up commercial radio stations, we were just too far away, so we just listened to the French Armed Forces Radio. One day the programme was suddenly interrupted and in French it said "5,4,3,2,1. For the bomb count down programme, they were using the local Armed Forces radio and everyone had a copy of the programme. For instance at two hours to go they played The Grand March by Aida. I remember that because it was my wedding march. We had clicked onto their count down programme and we picked that up three days before we expected the bomb to go off. We already had some other indications when the bomb was going to go off. Of course, having been to the British tests at Christmas Island, as had Alan Tyrell, we understood the preparations routine; the things that happen prior to an explosion."

"A couple of days later, the time came for the bomb test. We knew it was going to happen; we had worked that out. We knew the day. We then had one of those routine calls with the French. They didn't identify themselves but told us that the bomb would go off at 9 o'clock tomorrow morning. In fact it happened at 9.30. We were 30 minutes out. We had in fact 22 hours warning that the test was going to happen. On the day of the test it started cloudy. Overcast, low cloud, which was normal. The cloud cleared shortly after dawn. I think Clive Calkin was on the bridge at the time when a helicopter suddenly appeared out of the clouds and Clive said "Look at that a Super Frelon", a French helicopter. Alan Tyrell said "What do you mean, it's got USN on the side of it and a bloody great star". It was an American and mistaken OTAGO for its own mother ship the CORPUS CHRISTIE".

"My job at that stage was to measure the size of the bomb; you could do it by measuring range and a sextant angle between the horizon and then the base and the top of the cloud after so many seconds. It worked out the bomb was about 4 and half kilotons and about 20 miles off".

"Fraser Coleman was getting really fed up, because he was spending any thing up to 8 hours a day talking to the world news media. One day he came in and said "I have just been talking to this Japanese bloke for two hours and at the end of which he said "Now can we start the interview?", at which I hung up. It just went on and on and people seemed to have the impression that OTAGO had a red box on the stern and you just picked up the telephone. The whole thing was just taking off and in many ways it was getting out of control".

"Anyway when the bomb went off and our message via NZPA was released in Paris 6 minutes before any one else. Apparently in this reporting game, seconds count. To have it minutes before was just phenomenal. I can remember now clearly the message that came in from NZPA Wellington to David Barber, "Your press report was released in Paris 6 minutes before the French". A list of all the others and their timings were also given. In the last paragraph it said "Name your next position". He sent back one word "London", and off he went to London for two years".

"On the way home, we were re-organizing the officer's duties. One of my new duties was to be Duty Officer of the Day on arrival in port." There was in fact an ulterior motive in this - what I was interested in was being first across the brow. The only way of doing that was to make sure that I was in charge. We arrived at Devonport, the brow[1] went out and, as soon as it touched ashore I was across. My wife and daughter were standing at the bottom. I grabbed my daughter who was aged three and gave her a big hug just as a newspaper reporter turned up, took one photograph and disappeared. That photograph appeared on the Herald's front page". ■

RIGHT: Gerry Wright embraces his daughter Philippa on his return from Mururoa

BELOW: Christmas Island fold out image sequence. 1957

G.Wright Private Collection

Gerry Wright's two books are available through the Navy Museum Shop. Order on-line: www.navymuseum.mil.nz

Gerry Wright will speak at several venues in September (See page 31).

REFERENCES:

Oral History transcribed from interview with Lieutenant Commander G.C. Wright RNZN (Rtd) in Auckland February 1994. DLA 0085

1 Gangway between ships

Ephemera & Memorabilia

The Navy Museum holds an extensive eclectic and unique collection of ephemera and memorabilia from its sailors. It gives a different perspective on the political events of the time and provides an insight into the social and leisure activities of seamen while at sea. These collection items highlight the serious nature of the tests and also the efforts at light relief produced by the sailors.

SFL 0002

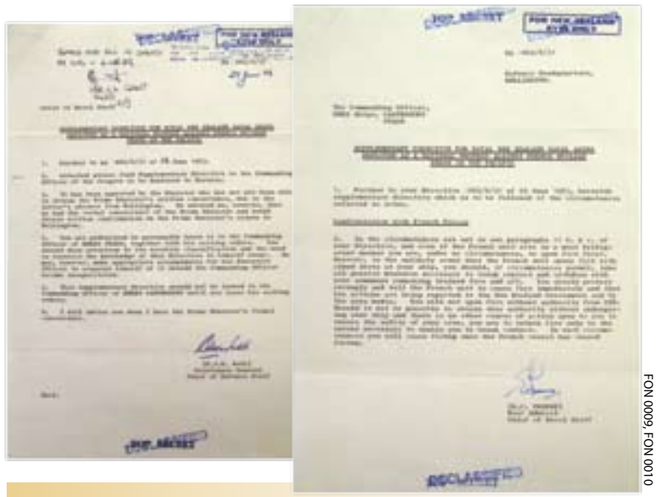
FLAG - HMNZS CANTERBURY

Donated by Mr Michael Bell, CANTERBURY flew this unofficial homemade flag at Mururoa Atoll July 1973. It features an H bomb and the words 'Norms Mystery Tours' (sic). Both CANTERBURY and OTAGO were sent to Mururoa by the New Zealand Prime Minister, Norman Kirk, as a national protest against French nuclear testing in the Pacific.

D-DAY ROUTINE - HMNZS PUKAKI

Daily orders issued on 14 April 1957 the day before the detonation of the first British Hydrogen bomb at Malden Island in the Christmas Islands.

FXA 0007



FON 0009, FON 0010

DEPLOYMENT DIRECTIVES - HMNZS OTAGO

"Supplementary Directive for RNZN Ships Deployed as a National Protest Against French Nuclear Tests in the Pacific" from the Chief of Defence Staff to the Chief of Naval Staff, 27 June 1973.Originally classified TOP SECRET but later over stamped DECLASSIFIED.

ELB 0017

MURUROA ENVELOPE - HMNZS CANTERBURY

Air Mail envelope showing a stamp of a mushroom cloud in the bottom left hand corner. The words HMNZS CANTERBURY at the top, 1973 in the cloud and Mururoa in the stem, with Captain F11 at the base. Leading Seaman Garthwaite (Squeak) made the mushroom shaped stamp from a pencil rubber and an altered ship's stamp. Captain Derek Cheney gave approval for the stamps use.

ENA 0260.

SHIP'S NEWSPAPERS - HMNZS PUKAKI

The Mid Pacific News Special Souvenir Edition, 15 May 1957. The red headline "BOMB GONE! H-Bomb puts Britain on Level Terms" tells something of the suspense the men aboard the PUKAKI must have felt before the bomb test at Malden Island. This would have been produced and distributed between the RN and RNZN ships involved in the bomb tests at Christmas Island.

The New Zealand Special Service Medal

(Nuclear Testing)

The New Zealand Special Service medal was introduced in 2002 to recognise personnel who undertook special operations in extreme or hazardous circumstances, which are not normally recognised by a campaign medal. There is scope for a number of different variations on the award. To date, three NZ Special Service Medals have been created: the NZSSM (Nuclear Testing), the NZSSM (Erebus) and the NZSSM (Asian Tsunami).

The NZSSM (Nuclear Testing) was issued to personnel (both servicemen and civilians) who were part of an official New Zealand Government presence at an atmospheric nuclear test between 1956 and 1973. These include not only the Christmas Island and Mururoa tests, but also those at Maralinga, Australia (1956-1957), Malden Island (Kiribati) (1957), Nevada, USA (1957) and Eniwetok Atoll, Marshall Islands (1958)[1].

The medal itself is simply inscribed "For Special Service". It features the NZ coat of arms on the front side with an array of NZ plants and flowers on the reverse including ferns, kowhai and pohutukawa. Its ribbon has an orange-yellow centre with crimson, red, white, and black stripes on either side.

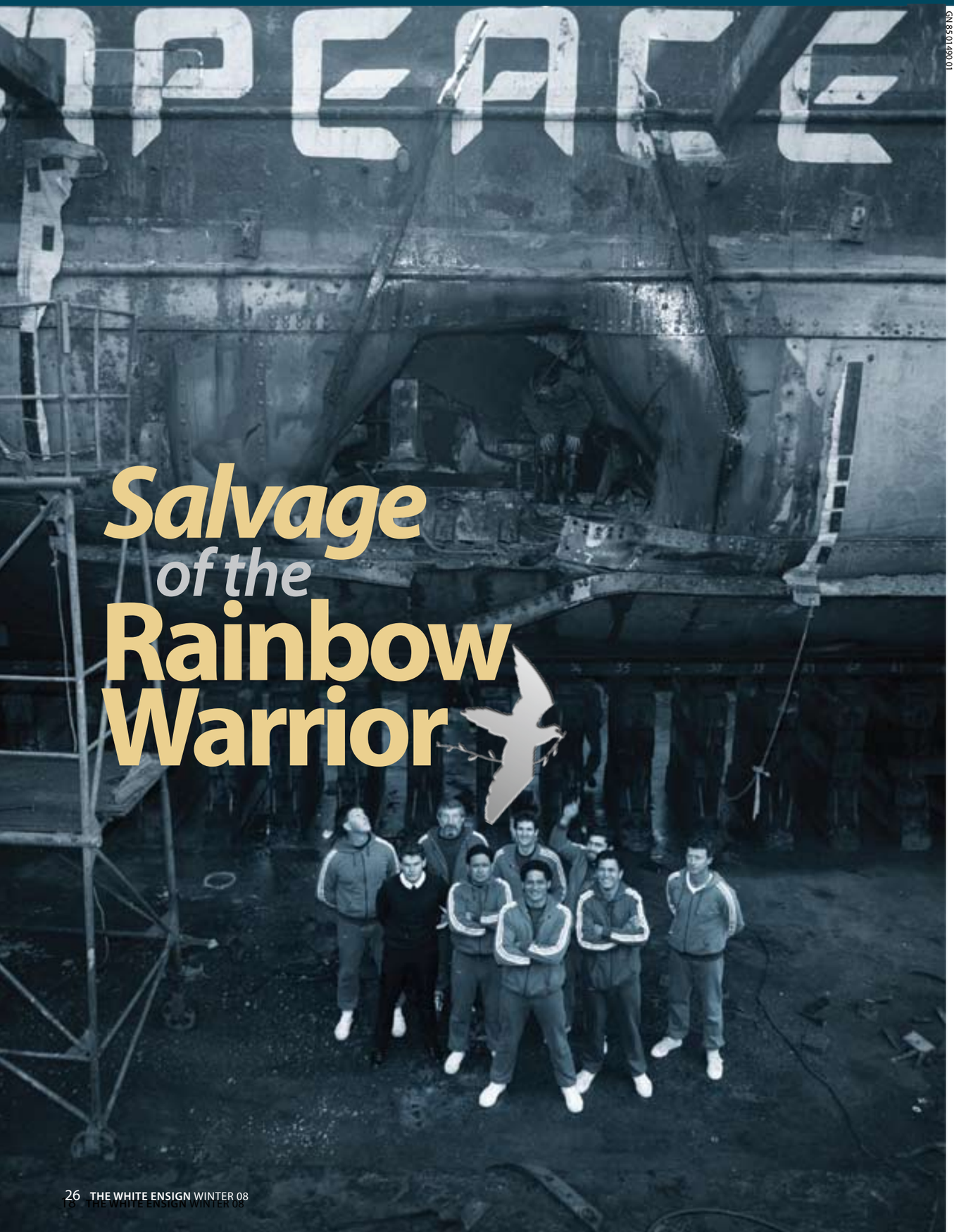
There was some controversy when the medal was introduced. Operation GRAPPLE veterans, who had been battling for compensation for health problems they attributed to the nuclear tests, were unhappy with the offer of the medal without an offer of compensation also.

The Special Service Medal held in the Navy Museum collection was issued to Leading Telegraphist Dennis Horne[2]. Horne entered the Navy to serve during wartime (1940-1946) and then rejoined in 1952 serving for 6 years until May 1958. Thus his service at Christmas Island aboard HMNZS ROTOITI was one of his last postings. His medal, along with his service records and assorted ephemera, was donated to the museum in 2005 by his long-term housekeeper, Mrs S.A. Currie. ■

CLAIRE FREEMAN

1 New Zealand Special Service Medal (Nuclear Testing) Regulations 2002

2 Horne Collection, 2007.6, R2299



Salvage of the Rainbow Warrior

GN 85 01490 01

AUX 0221

ABOVE: In freezing conditions the salvage crew remove the foremast 27 July 1985.

LEFT: LT Hugh Aitkin and his Divers, standing in Calliope Dock, in front of the hole that was later successfully patched.

Greenpeace had been very active in the peace flotilla at Mururoa in 1973. This article summarises Gavin Apperley's official report on the role the Navy had in salvaging the Greenpeace Ship Rainbow Warrior and in preserving evidence for the police investigation. It is reprinted from Navy Today July 2005, when it was written to mark the 20th anniversary of the sinking of the Rainbow Warrior.

On Thursday the 10 July 1985 the British registered Greenpeace vessel Rainbow Warrior was sunk in Auckland harbour by French saboteurs of the DGSE. Greenpeace Photographer Fernando Pereira was killed when the limpet mines exploded. The Navy's initial response was just 2 hours after the explosions, when Leading Diver (LDR) Schmidt of the Operational Diving Team (OPT) entered the wreck and recovered Pereira's body. The Diving Team also conducted a search of the hull and wharf for any other explosives; none were found.

The police declared the wreck a crime scene; they wanted it recovered for forensic examination, they even wanted to examine the seabed under the ship. Beginning the following Monday the ODT, under the command of LT Hugh Aitken, conducted a survey of the wreck, reporting a huge hole in the engine room, and extensive damage around the propeller and propeller shaft. In the subsequent two weeks the naval dockyard team assessed various options for salvage, while the Divers began clearing the interior of the ship, moving some 30 tons of equipment and fittings out of the wreck.

The salvage task was a daunting one; Rainbow Warrior had sunk onto her starboard side, burying the huge (2.4 x 1.5m) hole in her hull in the soft mud of the seabed. But the impact of the two limpet mines was immense, shock blast and shrapnel damage had spread far into the ship. When eventually salvaged a full inspection revealed she could never be made seaworthy again.

Many preparations went on in the next two weeks, before the Master of the Rainbow Warrior signed a salvage agreement with the police on 24 July; the next day CDRE Tempero (Commodore Auckland) signed an Administration Order placing Gavin Apperley, Constructive Manager at HMNZ Dockyard, in charge of the salvage. The Navy's resources, including the ODT were placed in support of Apperley's team; the Ministry of Transport's Oil Pollution Unit was also available (led by Gerry Wright, a former naval officer).

LTCDR Brian Ward, then Assistant Queen's Harbour Master and in charge of the Support Team of PHILOMEL sailors, saw the salvage in three main phases:

PHASE ONE,
19-28 July The removal of all accessible items in the Rainbow Warrior, a thorough survey of damage and, commencing patching of stern damage. ▸

TO THE WHITE ENSIGN WINTER 08

GN 85 01530 11

GN 85 01297 01

ABOVE: The RNZN Operational Diving Team worked continuously on the Rainbow Warrior from 11 July to 22 August in appalling conditions.

PHASE TWO,
28 July-19 August Patching, Engine Room Patches placed, test pumping and attaching air bags.

PHASE THREE,
19-22 August Raising the ship, moving her south along Marsden Wharf and finally moving her to Calliope Dock.

Even though the trawler had been sunk in shallow water and next to a wharf, the salvage was not simple. First were structural limitations of the wharf itself, then there were the structural limitations of the ship. Rainbow Warrior was old, suffered corrosion in key decks and bulkheads and had been rather carelessly converted by Greenpeace so that few of her internal bulkheads were in fact watertight (because cable runs and other alterations had been made without regard for basic ship fitting).

The salvage effort began with the divers; they had to clear the interior, block shrapnel holes and cable runs, and guide the suction hoses to rid the hull of mud; even the ship's drawings had to be recovered from underwater. And all this had to be done with police evidence in mind. It was of course winter: the days were short, the water cold – and polluted with diesel from the bomb-damaged fuel tanks – while the wind would blow up a nasty chop that pounded into the basin beside Marsden Wharf.

But after several approaches, it became inevitable that the Dockyard would have to fabricate a patch to cover the main hole in the engine room, and the divers would have to attach it over the hole. But because the ship could not be moved, the patch would have to be applied with the ship still on her side and barely a foot of clearance under her for the divers to operate in.

Underlying each of the decisions were many hours of calculations by the Constructor and his team. For all its size and apparent strength a ship is a dynamic object, but when filled with a 1000 tons of water and weakened by shock or blast, the structure can easily buckle or collapse. The Dockyard team knew that a wrong move could break up the ship, worse, an error could cause casualties among the salvage team. The Dockyard staff were assisted by the Ministry of Transport, who made their Apple III computer (in Wellington) available to assist with calculations.

GN 85 01513 01

ABOVE: Inside the Rainbow Warrior revealing the damage.

ABOVE: The Rainbow Warrior was placed in Calliope Dry Dock on 22 August 1985.

For the divers it was continuous hard work. LT Aitken reported that, "The salvage was a challenging task, conducted in conditions of nil visibility and often involving a high degree of difficulty. "

The Divers used surface supply breathing apparatus, which meant they had a continuous air supply. In the relatively shallow depths, they didn't have to worry about decompression tables, and the SSBA meant they enjoyed hard-wired communications with the surface. They quickly developed an excellent working relationship with the Police, the Auckland Harbour Board and the Fire Brigade (who provided additional pumps to assist the salvage).

Early on the decision was made to hire salvage airbags from Salvage Pacific Ltd in Fiji, these bags each with a five ton lift capacity, were mounted along Rainbow Warrior's starboard side to give additional buoyancy and to control the lift. That meant more work for the ODT who had to bolt and weld on the steel eyepieces to fasten each air bag to the hull of the ship. In addition, the Ministry of Transport loaned Captain G.C. Wright to assist and oversee the large capacity MOT pumps. "Always helpful, always cheerful, CAPT Wright became a strong member of our team," LTCDR Ward reported.

LTCDR Ward's Support Team did all the surface tasks imaginable: working on and in the Rainbow Warrior to make the accessible structure watertight, operating the pumps, even cooking for the whole salvage team. Few across the harbour in PHILOMEL understood the adverse conditions they were working in- for example the supply of dry socks became a bone of contention when the Supply Depot, not understanding the nature of the salvage work, told the salvage crew to wash and dry their own socks.

In mid-August, as more of the ship was being pumped out and made watertight it became apparent that the Navy's Rover gas turbine pumps were not up to the task. The Fire Brigade supplemented the pumping effort at short notice, in time for the final lift. When the final lift took place it was a cacophony of diesel engines: the five big MOT salvage pumps, the Fire Brigade's three pumps, five more from the Harbour Board and even the scream from the two Rovers, and the roar of air compressors supplying the divers and filling the salvage air bags.

At 0245 on 21 August the final lift began, by dawn Rainbow Warrior was partially afloat and almost upright, she was moved south and the pumps rearranged for the harbour crossing. At 1245 on 22 August Rainbow Warrior was docked in Calliope Dock; as the water drained down the full extent of the bomb blast could be seen. A Royal Navy underwater explosives expert flew in to assist with the Police examination; finally the Dockyard was tasked with sealing the ship and making her watertight for eventual disposal. On 25 September the Rainbow Warrior was undocked and the Navy's part in her salvage came to an end.

Today the Rainbow Warrior lies in Matauri Bay, Northland, accessible to sports divers. Her salvage was an interdepartmental and commercial team effort, led by the Naval Dockyard and involving many from PHILOMEL.

The salvage of the Rainbow Warrior is an event the Navy can look back on with pride. ■

REFERENCES:

G.C. Apperley, Salvage of the Rainbow Warrior: July/August 1985 at Marsden Wharf East, Report from Constructive Manager, HMNZ Dockyard, Auckland: RNZN., 1985.

Did you know...?
anti-flash gear

Anti-flash gear was developed after the 1916 Battle of Jutland, the major naval battle of WW1. It was then used in both world wars during action stations[1]. Flash is the result of explosion usually below decks, but can travel a considerable distance from the source. It is of very short duration and even thin clothing will give some protection[2]. Consequently, anti-flash gear was, and still is, an essential item of clothing during Action and at Emergency Stations.

When HMNZ Ships PUKAKI and ROTOITI took part in Operation GRAPPLE at Christmas Island all personnel wore working or action dress: overalls with anti-flash hoods and gloves. All personnel wore standard working or action dress: overalls with anti-flash hoods and gloves.

The anti-flash hood or helmet, which is like a balaclava, covers the neck and all of the head except for the eyes and nose. Anti-flash gloves are long-sleeved and designed to fit tightly over a shirt or overalls. The current RNZN Clothing Instructions (NZBR 3) describes how the gear should be worn, "The anti-flash hood is to be tucked inside the collar of the GWD [General Working Dress] Shirt. Anti-flash gloves are to be worn over the GWD sleeve with the shirt sleeve buttons secured around the wrist prior to fitting the glove"[3]. Also, trousers are to be worn tucked in socks; the intent is that one should be completely covered with clothing.

Considering that this was standard action dress throughout summer and winter, the discomfort felt by personnel such as those taking part in Operation Grapple in the heat of the Pacific, must have been almost unbearable at times. Furthermore, because anti-flash gear is fireproofed, it is designed never to be washed. As one serviceman noted, "In the tropics the helmet reeked of stale perspiration and was repulsive to wear. It nearly made me vomit"[4]. ■

CLAIRE FREEMAN

1 Andrew Gordon, The Rules of the Game: Jutland and British Naval Command. John Murray, London, 1996.
2 Manual of Seamanship, Volume II, 1951 BR 67 (2/51); London, Her Majesty's Stationery Office: 1952. p. 33

3 NZBR 3 - RNZN Clothing Instructions. pp. 79-80
4 Unsourced, undated handwritten note, Navy Museum object information file

FRIENDS OF THE NAVY MUSEUM

- If you are interested in the work of the Navy Museum, join our mailing list and receive updates on the progress of the new museum, volunteer opportunities and openings. You will also receive The White Ensign journal.

- Contact Christine Hodgson:
  P: 445 5186
  E: christine.hodgson@nzdf.mil.nz
  Post: Christine Hodgson, Navy Museum, Private Bag 32901, Devonport, Auckland.

WATERFRONT HERITAGE TRAIL AND NAVAL BASE TOURS

- Either explore Devonport's relationship with the Navy in a fascinating Waterfront Heritage Tour or book an historic tour through Devonport's Naval Base. There is no charge for either tour but bookings are essential.

- Contact Debbie Mckinney Tour Guide Leader for more information or bookings on:
  P: 09 4455186
  E: debbie.mckinney@nzdf.mil.nz
  Post: Navy Museum, Private Bag 32901, Devonport, Auckland.
  Or book on-line:
  www.navymuseum.mil.nz

ABOVE: Ian Barton
- a new navy recruit perhaps?

SCHOOL HOLIDAY PROGRAMMES

- **SALTY SEA DOGS-TERM 1**
  This holiday programme was themed around ships' mascots. Pelorus Jack, the famous bulldog from HMS New Zealand in WWI figured in stories, poems and music. Biscuit decorating, binocular making-the children had a ball. Lunch and games outside were followed by making zany ships' mascot puppets. What wonderful creations the kids came up with. Afternoon tea of sugary lolly coated biscuits- yummy!

- **SPLASH AND CRASH-TERM 2**
  In a new venue and with more days, once again we were fully subscribed. This holiday programme was themed around all the sounds of the ship and sea. The children made fabulous papier mache bells, took a ferry trip to visit the Maritime Museum and oh those lolly sculptures!
  Be in early to book for the next school holidays!

- **BOOKINGS**
  Debbie Mckinney
  P: 09 4455186
  E: Debbie.mckinney@nzdf.mil.nz

THE NAVY MUSEUM WILL BE HOLDING A VARIETY OF EXHIBITIONS THIS YEAR, ALL OF WHICH WILL BE OFFSITE, MAINLY IN DEVONPORT LOCATIONS

THE GREAT WHITE FLEET

- **NZ NATIONAL MARITIME MUSEUM, SANFORD GALLERY AUCKLAND VIADUCT.**
  OPEN SEVEN DAYS 9-5
  EXHIBITION RUNS AUGUST 1-17
  The Maritime and Navy Museum present an exhibition on the 100th anniversary of the Great White Fleet's visit to New Zealand in 1908. Featuring items from the Navy Museum's photographic and ephemera archives and American William Stewart's private collection.

- **NZ NATIONAL MARITIME MUSEUM MARITIME SPEAKER SERIES:**
  Maritime Room.17 August, 7 pm, $15
  James Recknor PhD, Professor of History at the Texas Technical University will speak on the 1908 visit of the Great White Fleet.

BOMB GONE! - THE NAVY AND NUCLEAR TESTING IN THE PACIFIC

- **DEPOT ARTSPACE**
  28 CLARENCE STREET, DEVONPORT
  30 AUGUST - 24 SEPTEMBER
  MON-SAT 10- 5 AND SUNDAY 10- 4.
  No charge
  The RNZN moved from a position of witness to one of protest regarding nuclear testing in the Pacific. This exhibition covers the Cold War period of nuclear proliferation and the developing local nuclear protest movement. An historian will be at the gallery from 10-12 Tuesday and Wednesday, to answer questions throughout the exhibition.

TRAINING AT TAMAKI:

- **PART OF NZ SCULPTURE ONSHORE**
  FORT TAKAPUNA, VAUXHALL RD, NARROWNECK
  7 November- 16 November
  Entrance charges apply.
  A small exhibition, in conjunction with the Department of Conservation, examining the Tamaki Training Facility located at Fort Takapuna 1954-1961.

FREE PUBLIC EVENTS

- **3 SEPTEMBER, 10-11**
  MAIN GALLERY, DEPOT ARTSPACE.
  Local resident and retired Petty Officer Arthur Venus talks on his experience during the tests at Christmas Island during Operation GRAPPLE.
  Followed by morning tea.
  No charge. *All welcome*

- **4 SEPTEMBER , 10-11**
  MAIN GALLERY, DEPOT ARTSPACE
  Gerry Wright, veteran of the tests at Christmas Island, Mururoa and part of the salvage team for the Rainbow Warrior, will speak in the main gallery.
  Followed by morning tea.
  No charge. *All welcome*

- **10 SEPTEMBER, 7PM, METHODIST CHURCH HALL, OWENS RD, DEVONPORT.**
  Join the Devonport Methodist evening lecture group when Gerry Wright discusses his involvement at Operation GRAPPLE and Mururoa.
  Followed by supper. *All welcome.*

- **25 SEPTEMBER, 7.30PM DRINKS AND NIBBLES, 8PM START, DEVONPORT LIBRARY, VICTORIA RD, DEVONPORT**
  Gerry Wright addresses Devonport Library Associates on his first hand experience at Christmas Island and Mururoa test sites. He will also discuss how he published his own book.
  All welcome.

- ***For further information on these and other events, and for material for Secondary Schools, please visit the Navy Museum website: www.navymuseum.mil.nz***

LETTERS TO THE EDITOR

After each edition of The White Ensign we receive wonderful letters, often with unique anecdotes and photographs which help to fill gaps in our knowledge and collection. As from Issue 6 we will publish a selection of these letters.
Write or email the Editor:
E: terry.manson@nzdf.mil.nz
Postal: The Editor, Navy Museum, Private Bag 32901, Devonnport, Auckland

NAVY MUSEUM

Te Waka Taonga o Te Taua Moana o Aotearoa