

# New Zealand's Fast Jet





This article is something of a departure from the normal run of the material submitted for publication in the Air Power Review. It chronicles the demise of the Skyhawk from the Royal New Zealand Air Force inventory leaving them with no offensive air capability. This opens up considerable scope for wider debate – one of the key aims of this journal. Defence budgets are always under pressure and scrutiny – even in times of total war. When either cash is short, or physical resources limited, the key question must be one of force definition. In the inter-war years, the Royal Air Force struggled year in and year out to decide on the balance between fighters and bombers. Other roles were often squeezed almost to extinction: but never quite to the point where a complete capability was lost. In current times, the debate on a European defence identity brings with it the enticing prospect of role specialisation, and by implication, role elimination. The New Zealand government have now set the precedent.

## New Zealand's Fast Jet

By Nick Lee-Frampton

Retirement is not unusual for a combat aircraft type but rarely does it mean eliminating the air combat element of an air force. However, when the surviving Skyhawks of the Royal New Zealand Air Force are shut down at base Ohakea in December 2001 the ability of the RNZAF to conduct air combat effectively will cease too.<sup>1</sup> An ambitious plan to lease surplus F-16A/Bs from the US as Skyhawk replacements was cancelled by the incoming New Zealand government which, last May 2001, announced that the Skyhawks will be withdrawn 'before Christmas.'<sup>2</sup> Following the end of flight operations both no's 2 and 75 Squadrons RNZAF will be disbanded, as will 14 Sqn with its Aermacchi MB-339CB trainers for whom the Skyhawks were its *raison d'être*. The only jets remaining in operational RNZAF service will be the two Boeing 727s purchased, second-hand, in 1981. This is a brief account of the 31 years the A-4K Skyhawk has served with the RNZAF.

In June 1962 when Air Vice-Marshal Ian Morrison was appointed its Chief of Air Staff, the RNZAF was in dire straits with obsolescent Sunderlands, vintage Vampires and relatively sophisticated Canberras.

'The Air Force was waning at that time. It was urgent that we get some new equipment into service and get morale up.'<sup>3</sup> AVM Morrison applied himself to re-equipping the RNZAF with 'first class' aircraft and in 1964 Air Staff Requirement No.5/Air set out the service's requirement for a Canberra replacement. It was to be a long range aircraft with the primary role of counter-air/interdiction and secondary roles of close air support and air defence. Some £23 million was set aside for the new combat aircraft to enter service by 1970.

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During 1964 the NZ media reported that Morrison wanted the F-111, a claim which drew a sharp response from the Government. Mr Marshall, acting Prime Minister, said 'I don't think such things should be discussed in public.'<sup>4</sup> Ironically, Morrison says he was misquoted:

'The newspaper said I wanted F-111s and I chose not to correct them.'<sup>5</sup>

By December 1965 the requirements for the Canberra replacement included the ability to provide effective air support for ground forces, high reliability and robustness, long range and the ability to operate closely with both American and Australian forces. Among the types considered for the role at the time were the McDonnell Phantom F-4, Northrop F-5, Dassault Mirage III, Douglas A-4 Skyhawk, LTV A-7 Corsair II and Lockheed's F-104G Starfighter. Unofficially, however, the RNZAF's Canberra pilots favoured the Buccaneer.

'We all thought they were marvellous. Two-place, twin-engined, a classic strike aeroplane ...'<sup>6</sup>

Officially, however, the F-4 Phantom was the preferred option. In comparison with its perceived rivals, the F-5 and the Mirage III, the F-4 offered greater range, versatility and all-round performance. However, the F-4's flyaway price was approximately \$2.1 million compared with \$1.6 million for the Australian-built Mirage III and a relatively paltry \$900,000 for the F-5. Nevertheless, in August 1966 the RNZAF formally asked the NZ Government for 16 F-4s. When the Cabinet's Defence Committee considered the matter in early December it became clear that cost was not the only obstacle confronting the RNZAF's plans. Echoing today's political environment some Cabinet members doubted whether combat aircraft per se were even necessary!

By early 1968 the political spotlight had focused on the Skyhawk which had been rejected by the RNZAF two years earlier because it was subsonic, single-engined and had only limited self-defence capabilities. Moreover, the A-4 had first flown in June 1954, only five years after the prototype Canberra and there was concern at the time that it might shortly be withdrawn from front-line service in the United States. However, the Skyhawk had continuously been improved and, crucially, at a flyaway price of \$935,000, it was affordable. Thus, in April 1968 an RNZAF evaluation team flew to the US, effectively to negotiate a Skyhawk purchase.

Fred Kinvig was just finishing an exchange tour with the USAF, flying F-4 Phantoms, when he was ordered to join the evaluation team in Los Angeles.<sup>7</sup> Kinvig had been very disappointed with the Phantom's range performance and was 'a little bit sceptical' of the A-4's combat radius. He arranged to carry out a maximum weight take-off in an A-4F and after flying for almost three hours was ordered to land because the evaluation team was tired of waiting for him!

*...after flying for almost three hours was ordered to land because the evaluation team was tired of waiting for him. 'I still had fuel left and I could have kept going for some time. ...I was most impressed with the [Skyhawk's] range figures'*



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The NZ Government was accordingly advised that the A-4 would make a very satisfactory Canberra replacement in the ground attack role and the evaluation team recommended the purchase of 18 Skyhawks, including four attrition aircraft. The US Department of Defence offered New Zealand two purchase options: either 14 aircraft (10 single-seat A-4Ks and four two-seat TA-4Ks) or 18 aircraft (12 A-4Ks and six TA-4Ks). Both options were valid only until 1st July 1968. After some four years of argument and inconclusive debate, the New Zealand Government suddenly had only a few weeks in which to decide whether or not to buy the A-4.

On 10th June 1968, the government approved the purchase of 10 A-4Ks and four TA-4Ks for the RNZAF. The entire package, including spares, support and training equipment, air and ground crew training in the US and new infrastructure in NZ, was estimated to cost less than \$25 million. RNZAF personnel had mixed feelings about the order.

AVM Morrison: 'Once the F-4s were turned down for being too expensive, an evaluation team was formed to go to the States and see what was left.'

'I'd been saying I would rather have six [F-4s] than 20 of the others, but in the event they came back and said these 1954 vintage aircraft could do the job with certain modifications ... and, by the grace of God, they've turned out remarkably well.'<sup>9</sup>

Squadron Leader John Scrimshaw: 'I remember thinking it would be better having a flight line full of A-4s than three or four F-4's with only one of them serviceable.'<sup>10</sup>

Wing Commander John Lanham: The RNZAF's Canberra pilots still wanted Buccaneers, or F-4s or F-111s or even TSR-2! There was gloom, despondency and horror [regarding the A-4].<sup>11</sup>

*'...I would rather have six [F-4s] than 20 of the others, but in the event they came back and said these 1954 vintage aircraft could do the job with certain modifications ... and, by the grace of God, they've turned out remarkably well'*

CAS John Hosie: 'The expectation of the Air Force was that we'd probably buy F-4s ... I mean we expected the F-4. Anyway, out of the blue comes the A-4. We didn't know what it was, we hadn't even heard of it. I guess the reaction was that we'd got this wrong.'<sup>12</sup>

Replacing the two-seat, two-engined Canberra with the single-seat, single engined Skyhawk that, moreover, lacked the former's range and self-starting capability didn't make sense to the young pilot.

'It seemed to us we were going backwards ... somehow we felt we'd been sold down the river. I think that was the general feeling.'<sup>13</sup>

John Scrimshaw was the first RNZAF pilot to go solo in a (US Navy) Skyhawk in Florida in February 1970.

'The training was quite a challenge for us, a big jump from the Vampires.'

The Skyhawks were equipped with Tacan which was new to the Kiwis and the pilots also were unfamiliar with flying in the US. The RNZAF almost lost its first Skyhawk before it had even seen it: USN pilots flew the first three RNZAF Skyhawks from California to Florida and the pilot of NZ6201 had a problem.

'There was a slight murmur in the engine and he radioed that he was thinking about [ejecting]. I said, "Look there'd be a bloody national emergency, a national disaster if you do that!"'<sup>14</sup>

Thereafter, RNZAF pilots flew the delivery flights.

For their trans-Pacific passage to New Zealand the Skyhawks were chained to the deck of the helicopter carrier USS Okinawa.<sup>15</sup> Following a safe landfall in the port of Auckland the Skyhawks were towed to the nearby RNZAF base at Whenuapai from where they would be flown to their operational base at Ohakea. At this point none of 75 Sqn's pilots had flown a Skyhawk for more than a month. Sqn Ldr Scrimshaw's log book shows his previous Skyhawk flight was to San Diego on 15th April, six weeks earlier.

"We had minimum hours on the things, we didn't have Tacan in place at Ohakea and we still had jagged hexagonal concrete blocks on the runways. The risk of blowing a tyre was quite high."<sup>16</sup>

Moreover, there was no ability at the time for making arrested landings in the event of a burst tyre.

'We were actually at our most vulnerable right at the beginning and I'm quite proud of the fact that we didn't have any accidents.'<sup>17</sup>



At least paperwork wasn't a problem!

'There were all these nice new aeroplanes but not a stick of furniture! Not a desk, not even a book in the hangar. We were so busy we didn't have the time to set up offices.'<sup>18</sup>

On 10th June 1970 the NZ Government formally handed over the Skyhawks to the RNZAF's Strike Wing and the first A-4K conversion course began (on schedule) two weeks later. Initially there was a chronic demand for formation fly-pasts, though they were not prominent on John Scrimshaw's agenda.<sup>19</sup>

'My feeling was we'd bought the Skyhawks as weapons, as close-support platforms. So we were totally concerned at finding targets and hitting them. To me, success was being within two seconds of time-on-target and getting a direct hit. That's what it was all about.'<sup>20</sup>

Exercise Flashover, the RNZAF Skyhawk's first overseas deployment began on 1st March 1971. Led by Sqn Ldr Scrimshaw, four Skyhawks flew to RAAF base Williamtown, near Sydney, in just over three hours. A RNZAF P-3 Orion provided search & rescue, navigation and communication support for the deployment. The day after arriving at Williamtown the Skyhawks took advantage of the RAAF Mirage's 420kt low-level corridors which compared favourably with the 360kts limit in New Zealand. The Skyhawks' camouflage proved effective in Australia except for the white drop tanks which proved conspicuous until they too were camouflaged. In July 1971 the Skyhawks used live weapons, including 500lb bombs, 5-in Zuni rockets and 20mm cannon shells, for the first time.<sup>21</sup>

Exercise Vanguard 14, the annual deployment to Singapore, took place in late October that year with the Skyhawks departing Ohakea for Richmond, Townsville and Darwin in Australia thence, via Bali, to Tengah air base in Singapore, some 5,800 miles (9,400km) from Ohakea.<sup>22</sup> Interestingly, the Skyhawks arrived at Tengah on the day the Five Power defence pact 'ANZUK' came into operation. Over the next three weeks, the Squadron flew from Malaysian bases at Butterworth, Kuantan and Kuala Lumpur.

The first of the new 'bent' refuelling probes was fitted during May 1973.<sup>23</sup> The modification had become a priority because the straight refuelling probes originally fitted occasionally leaked, allowing raw fuel to enter the starboard engine air intake. The new probes allowed the overseas deployment of a two-seat TA-4K for the first time.<sup>24</sup> This had not happened earlier because air-to-air refuelling was prohibited with the original probes. The Skyhawk's deployment procedure was much admired overseas.

'The Australians, for example, are amazed to see an RNZAF C-130 arrive half-an-hour before the eight Skyhawks, and in that time [get] out and ready all the equipment needed to service them.'<sup>25</sup>

John Hosie recalls that in those days the Skyhawks didn't have a park brake.

'You had to hold the aircraft on the brakes all the time, or have a chock. So when you shut down you needed someone to put chocks in and you needed a ladder to get down. That's basically all you needed, but to get started you needed power

and you needed air. And probably someone to take the chocks away, so you weren't in a position to go on your own.'

In those days the A-4K had a doppler navigation system. If you're flying at high altitude there can be slippage. Over a flat sea it would often go to memory mode, because it's not getting a good return.

'It gave you a continuous readout of latitude & longitude and, I think, distance to go, but still we'd have to navigate with the map spread out ... That's why we devised strip maps.'<sup>26</sup>

To ensure continuous communications en route, the P-3K used to take off an hour ahead of the Skyhawks.

'[We] would pass it about midpoint. We worked all this out before hand. ... That way we would be in continuous UHF contact.'

'Incidentally, we devised a fall-back position where we could do this with a C-130, but it wasn't so good ...'

'So the [P-3K] Orion [kept] track of where we were ... they had inertial navigation, so they kept an eye on us over long ocean legs and told us if we were wandering off track too much. Because really we were working blind. Sometimes you would get airborne and the doppler would stay in memory for the whole trip.'

'It was surprising how good we got at navigating ourselves across.'

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In October 1974 the Skyhawks were tasked to perform foreign fishing vessel (FFV) patrols of NZ territorial waters. On the first such sortie a Skyhawk flew around the coast line without identifying a single foreign fishing vessel.<sup>27</sup> That month too the RNZAF lost its first Skyhawk when 6207 crashed after its engine failed due to an oil pump problem. The pilot, Wg Cdr Fred Kinvig, then CO operations wing at Ohakea, ejected but broke his right leg on landing.<sup>28</sup>

In January 1975 all of the RNZAF Skyhawks' ejection seats were modified and four aircraft were grounded because of cracks beneath their starboard air intakes. Ironically, 11 Skyhawks were grounded for three days in early February when it was found that their ejection seats had been incorrectly assembled! The first AIM-9G Sidewinders were quietly introduced to operational service in July 1975, a process not completed until October.<sup>29</sup>



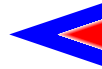
*The New Zealanders' high bomb scores led to enquiries regarding the Kiwis' recipe for success, although the answer, the TLAR 'That Looks About Right weapon aiming system' usually came as a surprise*

On the 30th March 1976 came a unique opportunity for the Skyhawks to fire their guns in anger! HMNZS Taupo, on fishery protection duties, had detected a Taiwanese squid boat, the Kim Nan, fishing illegally within the 12-mile limit. As the Taupo approached her, the fishing boat headed for international waters, ignoring radio calls and warning shots. The order was given to scramble a pair of Skyhawks armed with 20mm cannon shells and rockets. After repeated low passes across the bows of the fishing boat had no effect, the pilot of '01 was ordered to fire a burst of 20mm cannon 100 metres in front of the Kim Nan, which he did, causing the squid boat to stop immediately, approximately 100km off shore. The Taupo was then able to come alongside and put a boarding party aboard, so ending a seven-hour pursuit.<sup>30</sup>

June that year saw the Skyhawk's fifth Australian deployment, this time for Exercise Spanish Dollar at RAAF Williamtown. The exercise included ACM with RAAF Mirages and the A-4G Skyhawks of the RAN's VF805 Sqn. On the last night of the exercise, a Skyhawk had problems with its undercarriage and then both its hydraulic systems failed, causing the aircraft to be intermittently uncontrollable. Although more than justified in ejecting, US exchange pilot Capt Carter managed to land the aircraft, a feat which earned him the Air Force Cross.<sup>31</sup>

In April 1976 Sqn Ldr Ching Fuller and Flt Lt Al Curtis, both British, began their Skyhawk conversion in what was swiftly dubbed the Pom Pom Conversion Course. (Alan Curtiss was later killed flying a Sea Harrier in the Falklands). The two men finished their conversion course on the 25th June becoming fully fledged members of the 'Colonial Strike Force.'<sup>32</sup> The world's media took no notice of that event, but New Zealand's air space attracted international attention in January 1977 with reported sightings, in the Kaikoura region, of unidentified flying objects!<sup>33</sup>

Participation in the Hawaii-based Cope Thunder exercise in 1981 helped raise 75 Sqn's reputation.<sup>34</sup> The New Zealanders' high bomb scores led to enquiries regarding the Kiwis' recipe for success, although the answer, the TLAR 'That Looks About Right weapon aiming system' usually came as a surprise.<sup>35</sup> That month saw the 40,000th RNZAF Skyhawk hour, representing an average of more than 3,600 hours/year since May 1970.<sup>36</sup>



In the early 1980s the Skyhawk force was increased with the purchase of A-4G models from the Royal Australian Navy. On the 9th July 1984 a nine-man team set off for Nowra to familiarise themselves with the RAN A-4G's that were shortly to become RNZAF property. Compared with the A-4K the -G models had no avionics hump on the upper fuselage, no drag chute, different radios and a slightly different cockpit layout. The absence of a drag chute was arguably the most significant difference for on 3rd June 1985 one of the A-4Gs blew both main tyres when landing at Townsville and overturned. The pilot was uninjured, although doubtless upset to find himself inverted at such a low altitude. The incident served to highlight the value of having a braking chute available and prompted renewed efforts to have all the ex-RAN A-4's fitted with 'chutes as soon as possible.<sup>37</sup>

Twenty seven years after being disbanded, No.2 Squadron RNZAF was reformed in December 1984 at Ohakea and equipped with Skyhawks. In 1991 the squadron moved to Nowra in New South Wales to begin a decade of flying mainly in Australian skies.

*...it had become clear that upgraded Skyhawks could emulate much of the F-16's capabilities, especially in the maritime and close air support roles, for less than a fifth of the cost of a new aircraft!*



## **KAHU**

Project Kahu, updating both A-4G and A-4K Skyhawks with new radar and avionics, originated in the late 1970's when the RNZAF began wondering whether to replace the Skyhawks or update them. New Zealand's 1978 Defence Review mentioned a requirement to upgrade the aircraft's navigation and weapons delivery systems and the loss of a second Skyhawk, early in 1981, also raised the matter of adequate aircraft numbers. With only twelve Skyhawks remaining of the original 14, the credibility of the RNZAF's combat force was becoming suspect. Moreover, the increasing sophistication of new combat aircraft threatened to render the A-4K obsolescent.

'It had no computing power, a fixed gun-sight even more primitive than the one we'd had in Vampires and very simple, rudimentary avionics,' recalls Stu White, Kahu project manager.<sup>38</sup>

In 1981, after defining its operational requirements, the RNZAF began evaluating the acquisition of new aircraft while



also considering options for modernising the Skyhawks. By 1983 it was concluded that F-16s were the answer. However, it had also become clear that upgraded Skyhawks could emulate much of the F-16's capabilities, especially in the maritime and close air support roles, for less than a fifth of the cost of a new aircraft! There still remained the matter of replacing aircraft lost through attrition. Then in May 1983, with exquisite timing, the Royal Australian Navy (RAN) announced that its ten remaining A-4G & TA-4G Skyhawks were for sale. The decision to purchase the Australian Skyhawks was announced on 29th June 1984.

Also authorised was their conversion to 'K' specification, structural repairs to extend their fatigue life and, in principle, an upgrade programme to improve the Skyhawk's operational capabilities. The RFP elicited seven proposals from British, French, Israeli and US companies. All were carefully evaluated before Lear Siegler's bid was selected.<sup>39</sup> When the RNZAF first considered improving the Skyhawk's effectiveness, emphasis was placed on the close air support role. This, after all, was the focus the Government had adopted when seeking a Canberra successor. However, as mentioned in the 1983 Defence Review, maritime strike was now prominent in the Skyhawk's repertoire and this was emphasised in a new RFP, this time covering not 12 but 22 Skyhawks. Because of this change in focus, a multi-mode radar was substituted for the earlier requirement of a laser range finder and target seeker. Consideration was also given to replacing the 9,300lb thrust J-52 turbojet with a more powerful engine, but it was rejected as not being a cost-effective option. Six companies submitted tenders for the second RFP and once again Lear Siegler's bid was considered the best, both on technical and on financial grounds.

The NZ Government approved the \$148 million modernisation plan in May 1985 and eight months later the prime contract was awarded to Lear Siegler, now known as SLI Avionics Systems Corp, following a take-over by the British avionics firm Smiths Industries. RNZAF Flight Lieutenant Steve Moore was chosen to test-fly the Kahu prototypes and accordingly attended the Empire Test Pilots' School (ETPS) at Boscombe Down in 1985. Implementing Kahu fell behind schedule and installation work on the prototype only started in July 1987. Positioning the HUD was a major problem, says Moore:

'We had to have a second go at that in the single-seaters. When first installed it was far too low, ... even motoring the seat right down I couldn't get my eye low enough to see the HUD properly, so we had to get it higher.'<sup>40</sup>

The RNZAF's Skyhawks were equipped with the Ferranti model 4513 HUD which was unique in displaying both analogue and digital data. This combination of symbology resulted from having the benefit of test flying on the F-18, F-16, F-20, updated RAF Jaguars and the Mirage 2000, says Stu White.

'We were able to take best HUD features out of those aircraft and combine them into the A-4 to fully meet our requirements.'<sup>41</sup>

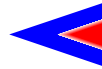
When the customary eight Skyhawks deployed to Williamtown for Willoh 86-3 in October 1986 the squadron had its first encounter with the RAAF's new F-18 Hornets of 3 Sqn. Within days 75 was claiming gun kills on the Australian's latest fighter.<sup>42</sup> In the closing months of 1986 the RNZAF purchased 100 AIM-9L missiles at a cost of \$11.6 million as well as second-hand AGM-65B Maverick TV-guided missiles from the Jordanian Air Force as an interim measure until IR -65G missiles became available. Celebrations in 1987 for the RNZAF's 50th anniversary included a remarkable formation of 30 aircraft, comprising RNZAF Skyhawks and Strikemasters and RAAF F-18s and Mirages. About this time too a visiting RAF VC-10 tanker allegedly plugged into a Skyhawk's buddy store but with commendable restraint took no fuel. Six RAAF F-18's (including a two-seater) of 77 Sqn arrived at Ohakea for a Willoh exercise in mid-November 1987. The F-18's technical advantages couldn't overcome the problem of its camouflage, which proved unsuitable for lo-level overland strike missions. Almost the opposite case applied to the Skyhawks, with excellent grey/green camouflage but minimal sophistication. During Vanguard 88 over the Malaysian jungle the pilots found their aircraft's new camouflage scheme, so effective by day, was disconcertingly effective at night when trying to maintain formation. Reflective tape was applied to make the Skyhawks suitably visible!<sup>43</sup>

April 1989 saw the first live firings of AGM-65B (TV guided) Maverick missiles. Overseas, the (pre-Kahu) Skyhawks on Vanguard had redeployed to Williamtown for a Willoh and used the opportunity to test their skill at getting within Sidewinder or guns range of the AIM-7 Sparrow armed Hornets. The last pre-Kahu Skyhawk flight was on the 28th June 1989 when 11 was flown from Ohakea to RNZAF Woodbourne for conversion. On 18th February, 1991 2 Sqn made its 'final' flight at Ohakea with a fly-past led by the squadron's new CO, Steve Moore. The squadron was redeployed to the RAN base at Nowra where the Skyhawks have assisted RAN warships' crews practise air defence as well as cooperating with RAAF exercises and providing new pilots with type conversion.

*In the past 18 months many of the most experienced members, both aircrew and groundcrew, of the two Skyhawk squadrons have resigned, leaving 2 Sqn with only four pilots for its five aircraft and 75 Sqn with just six pilots, one of them on exchange from the RAF*

'In the nearly three and a half years I was at Nowra there we carried out 22 deployments in total, a lot of those were to Williamtown, flying with the Hornet squadrons. Most of our flying was for the Navy.'<sup>44</sup>

Australian authorities naturally are dismayed that this valuable contribution to their military training will cease when the Skyhawks are phased out. In January 1991 Skyhawk pilots' monthly flying hours were officially reduced from 23.5 hours/month to 13.2 hours/month when the Gulf War caused the price of aviation fuel to almost double. However, over the previous six months actual flying hours for line pilots on 75 Sqn had averaged only 15 hours/month.<sup>45</sup> In the past 18 months many of the most experienced members, both aircrew and groundcrew, of the two Skyhawk



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NOTES

- 1 RNZAF base Ohakea is 22km west of Palmerston North in the lower North Island.
- 2 Officially the Skyhawks cease operating on 1 December 2001 but as this is a Saturday, flying will cease on 30 November 2001.
- 3 Interview, 1995.
- 4 The Dominion newspaper, Wellington, 29th June 1964.
- 5 Interview, 1995.
- 6 Interview 1996 with Wing Commander John Lanham, RNZAF (ret'd) erstwhile CO 75 Sqn.
- 7 Interview 1995, erstwhile CO of 75 Sqn.
- 8 Ibid.
- 9 Interview, op.cit.
- 10 Interview 1995, John Scrimshaw was CO of 75 Sqn until 1971
- 11 Op.cit.
- 12 John Hosie, Interview 1995 when he was CAS.
- 13 Ibid.
- 14 Op.cit.
- 15 Then technical NCO Barry Brinsdon, interviewed, says the carrier encountered a severe storm when close to its destination, Auckland. 'We didn't get any hot food – and very little sleep – for three days. Over half the Okinawa's crew were sea-sick ... The Skyhawks often disappeared in spray and foam.'
- "One night the Captain [of the Okinawa] said if we didn't get out of the storm in the next 18 hours he was going to have to lighten the ship ..."
- 16 Op. cit.
- 17 Op. cit.
- 18 Op. cit.
- 19 For example The Dominion newspaper, Wellington, NZ, 16 February 1973, reported that the RNZAF had staged three Skyhawk fly-pasts in the past week, one for a US Marine pilgrimage party, another for Dutch Prince

- Bernhard's departure from Auckland and a third for the opening of Parliament.
- 20 Op. cit.
- 21 75 Sqn official diary entry.
- 22 Ian Uffindell, interview, says that on that first transit through Bali the support Hercules he was on was surrounded by armed guards upon landing and none of the occupants were allowed off. 'The RNZAF were charged \$10 for each Skyhawk drag chute collected off Bali's runway and had to pay hundreds of dollars to get passports processed.'
- 23 75 Sqn official diary entry.
- 24 Exercise Vanguard 17 October/ November 1973. Interview Des Ashton.  
A lot of things that were wrong with the A-4 when they entered RNZAF service were gradually put right, he says.  
'I'm sure, for instance, in the old pilots' manual there was a note that ... during takeoff, the oil low light might come on. ... But that should never have happened. That warning got in [the manual] through the US Navy and I could never figure out [why].'  
Then one day the oil warning light illuminated on a Skyhawk during take-off. 'We couldn't fault the system and when we took the sensor out of the oil tank, we found [it] had been wired back to front at manufacture! It was a closed, sealed-up unit and there were a whole [batch] like that.'
- 25 Wg Cdr Boys RNZAF, reported in NZ Wings magazine, January 1974.
- 26 Op. cit.
- 27 John Lanham, op. cit 'It was really nonsense because if we saw anything we didn't recognise it, there was nothing we could do about it and there was no way we could check its distance offshore!'
- 28 The following year the Labour Party Conference debated a motion that the Government should not replace the lost Skyhawk. Defence Minister Bill Fraser said that the original purchase decision may not have been the right decision at the time, but that now the country was 'stuck with it.', research by author.

Seven RNZAF Skyhawks have been lost:

A-4K NZ6207 crashed 18 October 1974

TA-4K NZ6253 crashed 25 March 1981

A-4K NZ6210 crashed 24 October 1989

A-4K NZ6208 crashed 23 July 1992

A-4K NZ6203 crashed 20 June 1996

A-4K NZ6211 crashed 16 February 2001

TA-4K NZ6256 crashed 20 March 2001

29 75 Sqn op. cit.

30 John Hosie recalls hearing about the incident from an unexpected quarter. 'I remember being up at Hawaii on a seminar some three or four years after that [incident] and this US Coastguard Captain said: "You go down to New Zealand and ... mess about down there with fishing and don't have the right licences, they'll just blow you out of the water, no questions asked." I said to him afterwards, "Where did you get that from?" "Well it's true isn't it?," he said "A Taiwanese boat was down there and you sent some of your aircraft to attack it with rockets and guns." We never had any trouble for years after that [incident]; not a problem. It doesn't hurt to be able to do something a little nasty.'

31 75 Sqn op. cit.

32 Ibid.

33 Two Skyhawks were put on alert on the night of 2nd January 1979 but the call to scramble never came.

34 The squadron first exercised its Skyhawks at Hawaii in 1978.

35 'It is considered to be a credit to the RNZAF that 14 pilots could take eight aircraft with relatively unsophisticated nav/attack systems some 4,000 miles and compete credibly against some of the most expensive and advanced aircraft in the world. The flexibility displayed by our pilots in changing between roles in a forever changing environment proved the value of RNZAF training. Then to achieve the highest serviceability rate and equal, if not better, the results of the Americans in the air is truly something to be proud of,' signalled CAS, Sept 1984.

Interview 1995 with 75 Sqn Warrant Officer, Evan Wright. 'They're just a big lump of aluminium and bits of metal and wire, but maybe I don't have such an intimate relationship with them as other tradesmen do...'

'... The exercise scenario isn't a lot different to what we do in NZ in that we attempt to get as many aircraft available at any one time as possible.'

'Very seldom will we be able to deploy with the same people on consecutive exercises. It's a bit of a juggling act; you must keep the experienced people to look after the young guys, but you've got to take the young guys to give them the experience ...'

'Since Kahu the pack-up has actually got bigger, but they're giving us fewer Hercules to use ...'

36 75 Sqn op.cit.

37 Although badly damaged, 6218 was eventually repaired and returned to operational service five years later.

38 Interview.

39 The May 1982 RFP stipulated that ....

- Most of the work be conducted in New Zealand
- Both the A-4K and the TA-4K were to be modified
- There should be minimal structural change

Other major requirements included the provision of a head-up display (HUD), a weapons delivery computer, a radar warning system, an attitude reference system, a sophisticated navigation system, a laser ranging/target seeking system – and the elimination, so far as possible, of the cockpit's many deficiencies.

40 Steve Moore, interview.

Another problem involved the aircraft's centre of gravity. With all the new equipment in the nose, the centre of gravity had moved forwards. Although still within limits, it affected the aircraft's handling characteristics.

'You couldn't stall the two-seaters. So we ended up having to throw 106lb of lead into the tail of all the aircraft to compensate for it.' - Interview, Stu White.

41 'The entire system was developed and flown artificially to our satisfaction before it was installed on the prototype aircraft, all within 20 months of signing the contract,' says Stu White.

42 75 Sqn op.cit.

43 Ibid.

44 Interview op.cit.

45 75 Sqn op.cit.



**Eurofighter 2000 equipped with AIM-9 Sidewinder and AIM-120 AMRAAM missiles**

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