

## Cuban Missile Crisis

*"If you remember the sixties you weren't really there"* is variously attributed and is, of course, a reference to the impact of the burgeoning drug culture of the times. The reality is that any adult in the civilised world can remember very well several key events in the early 1960s including the shooting down of Gary Powers' U-2 over Russia, the Berlin Wall crisis, the assassination of President Kennedy, but perhaps most of all the Cuban Missile Crisis of 1962.

### The balance of arms

The actions of the Russian Premier, Nikita Khrushchev, in placing nuclear missiles and other arms in Cuba in 1962 only make sense when seen in context. From 1946 the two post-war super-powers – the United States of America and the Soviet Union – built formidable armouries, in the case of the Soviet Union in great secrecy. Evidence of the scale of Soviet arms and their effectiveness was slight and thus the US developed sophisticated systems for aerial reconnaissance in order that the risk of Russian

supremacy in numbers or quality could be minimised.

It obviously suited the US military to overstate the threat posed by Soviet Forces in order to ensure bigger defence budgets, and in general it suited those politicians with defence-related industry within their constituencies. Thus evolved the so-called bomber gap, followed by the imagined missile-gap which resulted in the US deploying significantly greater numbers of intermediate and inter-continental missiles and strategic bombers both in the US and Europe.

The United States government planned to deploy a vast armoury of strategic bombers (plus support tankers) and intercontinental or intermediate range ballistic missiles by the middle of 1962 as illustrated in Table 1. Through espionage the Soviet Union would have been well aware of the precise numbers and also that 20 Minuteman ICBMs were about to be declared in service. To protect the land-based assets the USAF maintained a force of 1,044 air defence fighters plus SAMs.

Weapon	Class	Nos in service	Range mls	Comment
B-52	Bomber	639	7,500	12½% airborne alert
B-47	Bomber	880	4,000	35% dispersed
B-58	Bomber	76	3,000	Ground alert
GAM-72 Quail	ALCM	436	445	B-52 Decoy missile
AGM-28 Hound Dog	ALCM	547	785	B-52 carried
KC-97	Tanker	503	4,300	50% dispersed
KC-135	Tanker	515	1,150	50% dispersed
SM-65 Atlas	ICBM	142	6,300	93 on alert
SM-68 Titan	ICBM	62	7,500	46 on alert
SM-80 Polaris	SLBM	116	2,500	Just in service
SM-75 Thor	IRBM	60	1,950	UK based
SM-78 Jupiter	IRBM	45	1,950	Italy & Turkey based

**Table 1 – US nuclear strategic weaponry October 1962**

Thus the US had an inventory of 1,595 bombers supported by 1,108 airborne refuellers, plus 204 ICBMs and 221 shorter range ballistic missiles based within range of the USSR. By way of contrast the USSR could field an estimated 160 bombers (102 Tu-95 *Bear* and 58 M-3 *Bison*): 57 of the Bears were reportedly equipped with the 300 mile range Kh-20 (AS-3 *Kangaroo*) cruise missile. 37 submarines carried a total of 104 missiles but with ranges of between 80 and 750 miles. Finally, the Rocket Forces were credited with fielding six R-7 (SS-6 *Sapwood*) and 32 R-16 (SS-7 *Saddler*) ICBMs.

In addition to the strategic armoury, the USSR had available a number of SS-4 *Sandal* MRBMs and SS-5 *Skean* IRBMs, but these did not have the range to hit the US. The Soviet Union and its Warsaw Pact (WarPac) allies did have one significant advantage over the western allies, however. In Europe NATO forces were outnumbered by WarPac 2:1 in conventional forces including armour, artillery, infantry and soft vehicles.

## **Geography and confrontation**

During the latter part of the Second World War the allies had carved up Europe into spheres of interest. Germany was to be divided and Berlin, within the Soviet eastern zone, also divided. This offended the Russians who maintained a physical blockade through 1948-49 only overcome through a massive airlift. West Berlin was to remain a thorn in the Russian side.

Between 1953 and 1961 US Republican President Dwight D Eisenhower served two terms of office

and was responsible for overseeing a dramatic growth in nuclear weapons, which he saw as a cheap option compared to conventional weapons. During his presidency he had acted decisively in ending the war in Korea, and applying force in support of US interests, for example, in intervening in the Lebanon in 1958.

Another area of action was to be Cuba. Situated just 90 miles to the south of Florida this largest Caribbean island (780 miles long) had been a US colony from 1898-1902 and then notionally independent. In fact there was considerable US influence culminating in support for the totally corrupt regime of Fulgencio Batista who came to power in 1952 in a coup. Opposition to the regime was led by Fidel Castro, who 'invaded' Cuba with a small force in 1956 and succeeded in ousting Batista in January 1959. Notwithstanding the change in regime, the US Navy retained its base and airfields at Guantanamo Bay in the extreme south-east.

Castro's regime was seen by the US as being communist rather than nationalist and from October 1960 dramatic trade sanctions were imposed. Prior to that, on 4 March 1960, the French merchant ship *La Coubre* off-loading Belgian munitions exploded in Havana harbour killing at least 75: the CIA was blamed. Eisenhower then supported a covert CIA plan for an invasion of the island by Cuban exiles, many of whom were now living in Florida. Before the invasion could be implemented the Democrat John F Kennedy was installed as President in January 1961. Kennedy had been critical of the Republican stance on over-reliance on missiles and had doubts about the balance of power.

Eisenhower had been coy about going public on analysis of Soviet strategic forces, partly through limited intelligence on the ground and partly because he did not want to compromise the top-secret CIA managed U-2 overflight programme. However, the U-2 flights were well-known to the Russians and on 1 May 1960 a CIA U-2 was brought down by SAM over Sverdlovsk. Eisenhower initially denied knowledge and was then humiliated when the Russians announced that the pilot had been captured. Exactly two months later a second intelligence-gathering aircraft, this time ERB-47H (543281) of the 55<sup>th</sup> SRW flying from the UK was shot down by fighters over the Barents Sea.

Thus the new President, perceived by the Soviet leadership to be inexperienced and weak, was barely installed in office when the invasion started with air attacks on 15 April 1961. These were followed by seaborne landings at Bahia de Cochinos (Bay of Pigs) the following day. Kennedy had serious reservations about the plan and had categorically instructed that no US forces were to be involved. The invasion force of 1,450 was soon contained and subject to air attacks. Although the carrier *USS Essex* was standing by, her aircraft were used solely for reconnaissance: the invasion failed.

For some years after the Bay of Pigs fiasco the US Government, through the CIA, continued to support counter-revolutionaries in Cuba, whose forces were centred on the Sierra del Escambray, to the north-east of Cienfuegos. Rented aircraft were used to drop weapons and supplies and also light bombs on commercial targets. (Cessna 210

N8365Z piloted by exile Louis Diaz Lopez, flying from West Palm Beach was shot down on 19 June 1964 after bombing a sugar mill at Caaibarien, for example.)

With sanctions in place Castro now turned to the Soviet bloc for arms (the UK had blocked the sale of ten Sea Furies in 1960). The first order for aircraft was for Mig-15s (NATO reporting name *Fagot*) and in preparation pilots were trained in Czechoslovakia and China. By the summer of 1962 there were 41 Mig-15s in three squadrons, plus one squadron of MiG-19s at San Antonio AB.

While Kennedy was reflecting on the aftermath of the Bay of Pigs fiasco he was to be tested 4,000 miles away in Berlin. The idea of a re-united Germany understandably horrified the Russians and from 1955, when the Federal Republic was announced, increasing pressure was applied on Berlin. Khrushchev and Kennedy met for the first time at a summit in Vienna on 4 June 1961 when the Soviet Premier issued an ultimatum that if the three allied powers (France, the UK and the US) did not withdraw from Berlin, the Soviet Union would conclude a peace pact with East Germany handing over control of access by 31 December.

The Soviet defence budget was been increased by 25% on 8 July and on the 25<sup>th</sup> Kennedy announced an increase in the defence budget, primarily aimed at improving and increasing conventional forces. In addition he announced expenditure aimed at providing bomb shelters and stocks plus improved air-raid warning, which must have given the Russians pause for thought.

The next stage in the confrontation was the construction of a fence around West Berlin in August followed by the construction of a wall, with the closure of 63 of 80 exit points between East and West Berlin. Kennedy was stuck with limited conventional forces so Reserve and National Guard units were called up with a number transiting the Atlantic for European bases in Operation *Stair Step*. The Soviet Union resumed its nuclear test programme, detonating the largest nuclear weapon ever – 58MT – on 30 October. The deadline passed and the US began withdrawing its reserve units, having been incapable of preventing physical isolation, but not having conceded withdrawal.

Kennedy's attention was soon having to turn back to problems nearer to home.

### **On the doorstep**

Soviet leaders noted that Kennedy had been ambivalent over supporting the Cuban invasion, conciliatory at the Summit and weak over Berlin. Appreciating the huge imbalance of strategic arms available, Khrushchev decided to improve matters by basing shorter range missiles in the American backyard – Cuba. It has been reported that the disparity between US and Soviet nuclear warheads at the time was of the order 27,000 to 3,600 so getting more of them closer to the major target would be invaluable. The Soviet view was that Kennedy would not react physically.

As mentioned earlier the Kennedy administration was already pre-occupied with Cuba and had committed the CIA to covert operations in the island in Operation *Mongoose*. The CIA had been infiltrated in Germany and had failed in its intelligence mission during the Berlin Wall crisis. Under its new head, John McCone, the Agency tried to secure better intelligence on what was going on within Cuba, being aware that arms were being imported from the Soviet bloc.

To start with, McCone related an increase in Soviet vessels berthing in Cuban ports (38 in seven weeks) to an instinct that the Soviet Union would decide to base IRBMs on Cuba. Hard evidence was not available, despite occasional CIA U-2 overflights since March which were checking on conventional arms, but he advised Kennedy on the 22 August of his fears. From this date the Agency produced daily *Psalm* situation reports (sitreps). Agency U-2 flights over Cuba were stepped up, and US Navy and US Air Force patrol and reconnaissance aircraft paid special attention to Soviet shipping.

On 29 August, an Agency U-2 flight from McCoy AB Florida, photographed two S-75 Dvina (SA-2 *Guideline*) surface-to-air missile (SAM) sites on Cuba and six more under construction. Photo-interpreters became anxious when it was realized that the layout was similar to SAM sites associated with the protection of ballistic missile bases in the Soviet Union.



### **SA-2 site at La Coloma in Cuba**

On 4 September Kennedy warned Khrushchev that the United States would not tolerate the siting of offensive weapons on Cuba, and Khrushchev replied by saying that the Soviet Union had no need to place such weapons in the Caribbean. Several days later, however, a P-2 Neptune of VP-44 photographed the freighter *Omsk* heading for Havana with large, oblong canisters on the decks and the vessel berthed on the 8th. U-2 flights were again stepped up.

On 19 September, the US Intelligence Board reported its view that Russia would not deploy nuclear weapons in Cuba, although four days earlier a second shipment of missiles had arrived in Havana. Further reconnaissance flights showed more construction work, but from 10 October the US Air Force's 4080th Strategic Reconnaissance Wing

(SRW) formally assumed responsibility for overflights from the CIA. Up to this time the CIA had flown seven sorties from the beginning of August.

The primary reason for the transfer of responsibility to the USAF was the threat from SA-2 missiles. On 14 October, Major Steve Heyser flew a U-2F out of Patrick AFB, Florida. His route took him over Cuba for just six minutes, during which time he took 928 photographs of two sites at San Cristobal and Sagua la Grande. They were processed the following day, but President Kennedy was not alerted until the 16th. They clearly showed SS-4 *Sandal* MRBM sites in an advanced state of preparation. What was to become known in the West as the Cuban Missile Crisis had begun. (In the Soviet Union it was the Caribbean Crisis and in Cuba the October Crisis.)



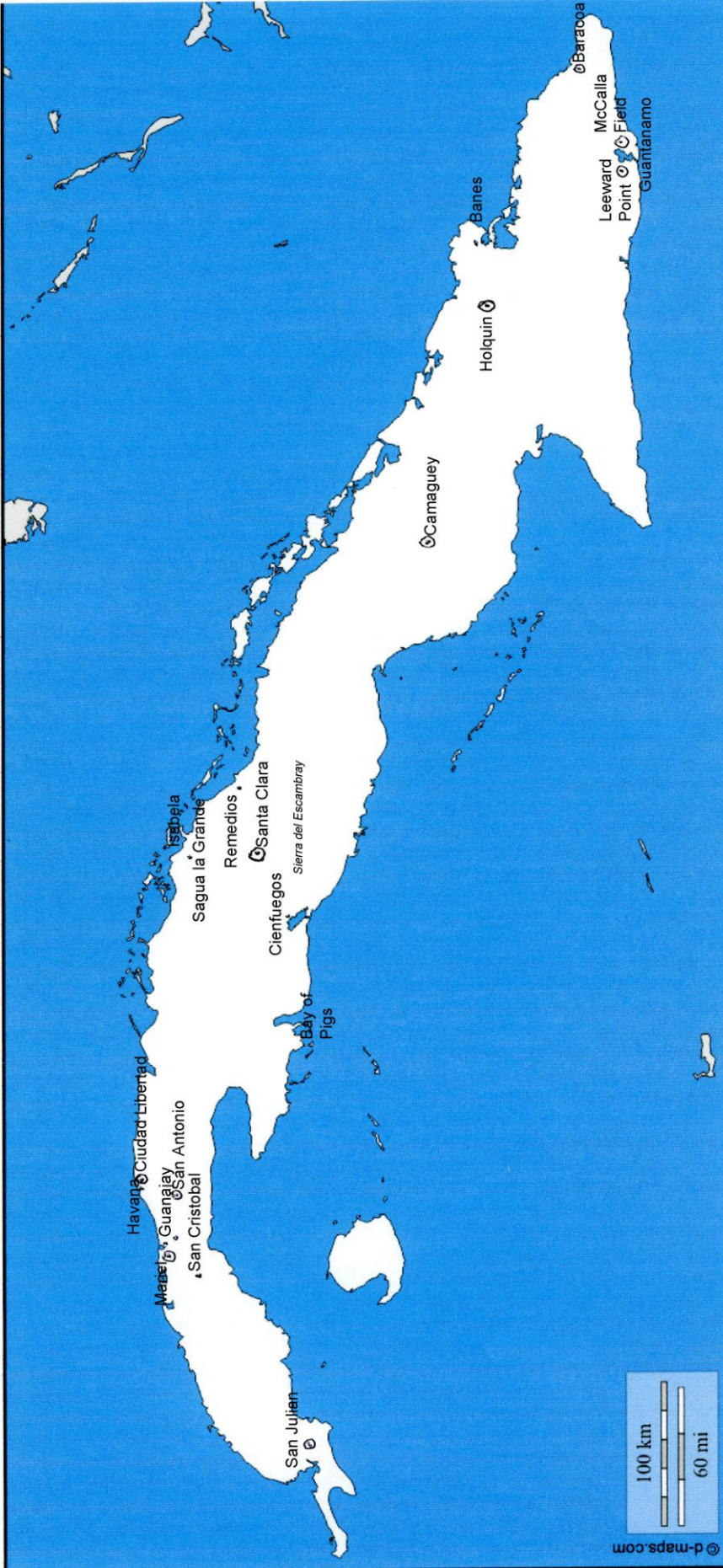


***SS-4 site at San Cristobal 23 October 1962***



***USAF U-2C 566701***





## The Soviet plan

Following the Berlin Wall crisis, Nikita Khrushchev appears to have decided to test Kennedy further and let the US know what it felt like to have an embedded enemy. He persuaded Fidel Castro that it would be helpful for both parties if Soviet nuclear forces were based on Cuba to deter any further assaults from the US. Castro

reluctantly agreed and Operation *Anadyr* got underway.

At the core of the arrangement was the intended deployment of at least 36 R-12 (SS-4 *Sandal*) MRBMs and 24 R-14 (SS-5 *Skean*) IRBM strategic missiles in five missile regiments, each with eight launchers and 12 missiles, as follows.

Division	Regiment	Type	Located
29th	79th	R-12/SS-4	Sagua la Grande
50th	181st	R-12/SS-4	San Cristobal
43 <sup>rd</sup>	664th	R-12/SS-4	San Cristobal
43 <sup>rd</sup>	665th	R-14/SS-5	Guanajay/Remedios
43 <sup>rd</sup>	668th	R-14/SS-5	Guanajay/Remedios

**Table 2 – Soviet strategic missile units in Cuba**



### SS-5 *Skean*

Two aviation engineering regiments would deploy 80 KFR-1/SSCa *Salish* mobile cruise missiles with nuclear warheads from coastal sites (90 mile range) and of 42 Il-28 *Beagle* bombers based in the east at Holquin, six would be nuclear fitted. This arsenal was to be protected against air attack by the

10<sup>th</sup> and 11<sup>th</sup> Air Defence Divisions, each with 72 launchers and 288 SA-2 *Guideline* SAMs and the 32<sup>nd</sup> Guards Fighter Aviation Regt with 42 MiG-21F-13 *Fishbed* Cs based at Camaguey, Santa Clara and San Antonio now operating as the 213 Aviation Regt.





***Preserved KFR-1/SSCa Salish at Havana***

These assets were all supported by four motorised rifle regiments which fielded 120 tanks, artillery and up to 60 15 mile range 9K53 *Luna* (FROG-1) artillery rockets, for 12 of which there were 'special' warheads. In total the personnel

involved comprised no fewer than 43,000 'agricultural advisers'. There were in addition six Komar-class fast attack craft each with two P-15 *Termit*/SS-N-2 *Styx* missiles, based at Cienfuegos, Banes and Havana.



***Preserved SS-N-2 Styx at Cienfuegos***

The warheads were unloaded at la Isabela with SS-4 warheads stored at Bejucal and those of the FROGs at Managua.

The Mig-21s had arrived in July, the senior officers flying from Moscow on 16 July in Aeroflot Il-18 CCCP-75789. Through August and September much of the infrastructure for the strategic missiles was unloaded, mainly through Mariel, together with some of the SS-4s and Il-28s and the manpower necessary to construct and defend the bases.

### **US reaction**

After the first proof of MRBM sites on 14 October, the SAC U-2 flights were stepped up with no fewer than six being flown on the 17<sup>th</sup>. As the days passed not only were more bases discovered, but rapid advances in construction noted on bases already filmed. On Tuesday 16 October, President Kennedy met with a war cabinet to be known as the Executive Committee (ExCom) of the National Security Council. It was to meet daily for the duration.

Despite Director McCone's earlier warnings, the analysts at CIA ignored them while he was away in France on honeymoon and the politicians were slow to pay heed to the evidence. Thus nearly two precious months of potential planning and negotiating were lost which in

itself would have given the Soviets comfort, although the Americans did send out several clear warnings that the siting of strategic missiles in Cuba would not be tolerated.

By 22 October the following launch sites were confirmed, in addition to the SAM, FROG and SSC-2a sites - Guanajay 2 SS-5, Remedios 1 SS-5, San Cristobal 4 SS-4, Sagua la Grande 2 SS-4. On the airfields there were the following:

### ***FAR***

Baracoa – Mi-1, Mi-4  
Camaguey – MiG-15bis  
Ciudad Libertad – MiG-15Rbis (recce),  
Mi-4  
Holguin – MiG-15bis  
San Antonio de los Banos –MiG-19P,  
MiG-15bis, Il-14  
Santa Clara –MiG-15bis

### ***Soviet air forces***

Camaguey – 3 Sqn 213 Av Regt PVO  
MiG-21F-13  
Holguin – VVS Il-28, FAR MiG-15bis  
Mariel – 437<sup>th</sup> Helicopter Regt VVS  
Mi-4  
San Antonio de los Banos – 2 Sqn,  
213 Av Regt PVO MiG-21F-13  
San Julian – 759 Torpedo Regt VMF  
Il-28  
Santa Clara – 1 Sqn 213 Av Regt PVO  
MiG-21F-13



***MiG-21s of 213Av Regt Santa Clara 10 November 1962***



***Il-28s being assembled San Julian 27 October 1962***



The tasks for ExCom were formidable. It had to assimilate the latest information while formulating a response. Since the response options would inevitably revolve around military action, and much of that aircraft, the air forces would be heavily committed. On Thursday 18 October, Kennedy kept a pre-arranged meeting with the Soviet Foreign Secretary Gromyko, but, when warned of the perceived threat to US security, Gromyko assured the President that defensive arms only were in Cuba.

The options facing the US government boiled down to just six:

- 1 Do nothing
- 2 Try diplomacy – talk
- 3 Send warnings
- 4 Prevent arms deployment through blockade
- 5 Conduct air strikes on deployed arms
- 6 Invade Cuba

As the evidence mounted Kennedy decided to take formal action with a public announcement on Monday 22<sup>nd</sup>. A blockade would have been an act of war, so isolation of Cuba was determined in the form of quarantine. B-52 and B-47 bombers of SAC were put on full alert and a number of the latter dispersed to civilian airports. The quarantine was signed on the 23<sup>rd</sup>, coming into effect at 1000 EDT on the 24<sup>th</sup>. It created a barrier 800 miles distant but reducing to 500 miles (the *Walnut* line) to give the Russians more time to signal their ships in transit. By late Wednesday some vessels were stopping, only to restart the following day.

3,190 civilians were evacuated from the US Navy base at Guantanamo while it was reinforced with a garrison of 8,000 Marines and sailors. In the course of bringing in

ammunition C-135B 624136 of 1611 ATW McGuire AFB stalled and crashed on the approach to NAS Leeward Point on 23 October. Task Force 135 was established to defend the base including the carriers *Enterprise* (CVN-65) and *Independence* (CVA-62). The Guantanamo base was strengthened not just for defence, but in order to play its part in offensive action should the quarantine fail.

Tension increased on the 27<sup>th</sup> as Major Rudolph Anderson was killed during an overflight of naval installations at Banes in U-2C 566676. His pressure suit ruptured after his aircraft was hit by shrapnel from an SA-2 missile: it was his sixth Cuban sortie. Early the following day, Soviet intercontinental missiles (ICBMs) were readied as another U-2 inadvertently but embarrassingly overflew the Chukotka peninsula.

The demands on the air forces were extensive and their tasks may be broadly listed as reconnaissance, quarantine enforcement, deterrent alert, and tactical support of prospective military action against Cuba.

## Reconnaissance

The initial reconnaissance had been conducted at a leisurely rate from April 1962 by CIA U-2s in Operation *Nimbus*. (Prior to that, though, it appears that the RAF probably flew at least four sorties for the CIA in December 1961. Three Valiants (WZ394, 396 and 397) of 543 Sqn were in Jamaica flying survey missions in the wake of devastation caused by Hurricane *Hattie*. In the course of this work Cuban airfields were overflown to monitor re-construction work: the sorties returned to Kindley AFB for processing and de-briefing before return to Jamaica.)



***Valiant B(PR)1 WZ394 of 543 Sqn was one of three which overflew Cuba***

The task was transferred to the USAF's 4028<sup>th</sup> SRS (4080th SW) from 14 October because of the SAM threat, and from then to 30 November 91 sorties were conducted, some of them ELINT missions. Most were flown from McCoy AFB. The 4080th borrowed two high-flying U-2F

variants with the J-75 engine from WRSP-4 at Edwards AFB. They were equipped with electronic countermeasures (ECM), and sorties were also flown from Barksdale and Laughlin AFBs in Operation *Brass Knob*.



***ERB-47H 536245 of 55<sup>th</sup> SRW***

Because of the height at which they operated the U-2s used a tracking camera, film from which confirmed the route and placed the much higher resolution detailed photos from the 36" Hycon camera. In support of the U-2 missions were RB-47 aircraft of 55th SRW operating mainly from MacDill AFB in Operation *Blue Ink* weather reconnaissance missions around Cuba, of which 72 were flown.

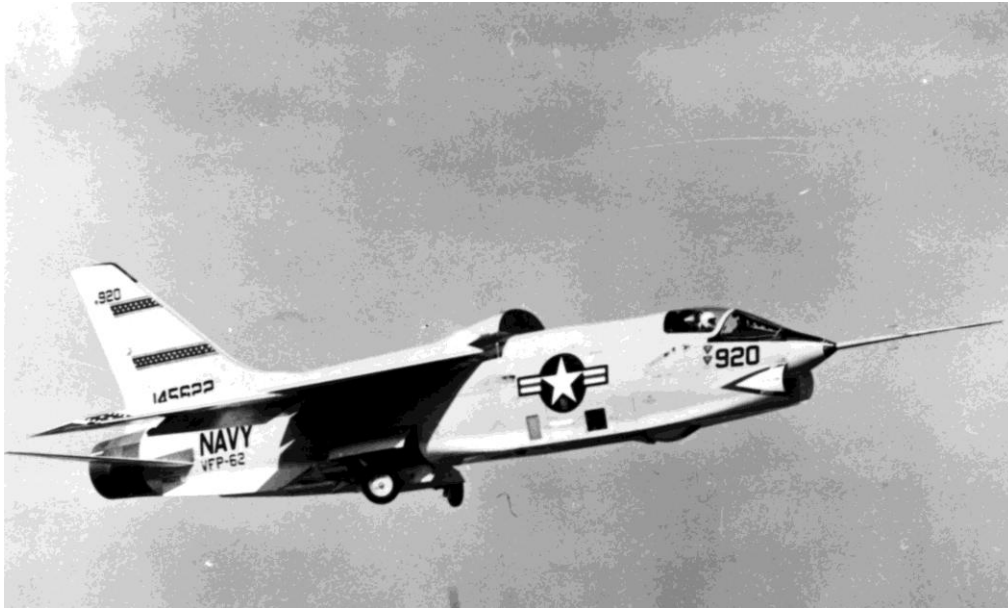
In September 55th SRW had begun electronic intelligence-gathering (ELINT) flights from Forbes AFB with the RB-47H under Operation *Common Cause*. These flights continued weekly to 14 October, thereafter twice daily, a total of 116 being flown. The sortie on the 14<sup>th</sup> was 9hrs flying around Cuba with refuelling en route from a KC-135A of 96 ARS Altus AFB. On return to Forbes materials were transferred to Offutt AFB for processing and assessment. The third set of tasks for the RB-47s was to support the search for vessels over a vast area of the Atlantic south of a line from the Azores to Bermuda, supported by KC-97 aircraft from 303th ARS at Kindley, Bermuda, and 98th ARS on TDY at Lajes, Azores in addition to its own tanker unit 55th ARS. In Operation

*Blue Banner* 20 RB-47 missions were flown, some to look for the tanker *Grozny* (Operation *Baby Bonnet*) which had been spotted mid-ocean carrying missile fuel tanks on the upper deck.

The RB-47 flights were not without cost, with three aircraft and their crews being lost, all crashing on take-off. On 27 September RB-47K 534327 crashed at Forbes AFB. RB-47H 536248, one of the *Blue Banner* aircraft, crashed at Kindley AFB on 26 October. Finally, one of the U-2 weather support aircraft, RB-47H 534297 crashed at MacDill AFB on 11 November.

USAF Strategic Air Command had been given control of 3225th Drone Squadron operating the DC-130 with Ryan 147A drones flying out of MacDill AFB and according to the official SAC history, de-classified in 1992, these flew sorties over Cuba from June to 4 November in the *Quick Fox* programme. Another type used in the intelligence role was a YB-58 Hustler (550668) which flew a single ELINT mission on 30 October. Fitted with an AN/APS-73 *Quick Check* SLAR pod and crewed by General Dynamics personnel it flew along the north coast of Cuba, but results were poor at high speed.





### ***RF-8A of VFP-62***

As the seriousness of the situation unfolded and sites were identified, the decision was made to commit low level PR aircraft to specific targets. Both the Navy and Air Force flew short-range tactical missions in Operation *Blue Moon*. RF-8A Crusaders of VFP-62 (tail code GA) with additional pilots and aircraft from VM CJ-2 (CY) were detached from NAS Cecil Field to NAS Key West and flew their first sorties on 23 October targeting San Cristobal and Sagua la Grande. All missions were flown in pairs and the aircraft recovered to their

home base to offload the film for processing. A few sorties were also flown by a VM CJ-2 detachment at Guantanamo Bay.

On the 26<sup>th</sup> the RF-101Cs of 29<sup>th</sup> TRS, 636rd TRW, detached from their home base at Shaw AFB to MacDill AFB, flew their first sorties. Also at MacDill were RB-66Bs of the 9<sup>th</sup> TRS. In total 250 low level sorties were flown to 15 November, of which the RF-8s flew 168. Helping to coordinate the intelligence-gathering effort were EA-3As of VQ-2 detached from Rota, Spain



***San Cristobal SS-4 site 27 October 1962***

### **Policing the quarantine**

On 11 October the US joint chiefs of staff (JCS) instructed Admiral Robert Dennison, CinC Atlantic Fleet (CINCLANT), to get a force ready to implement contingency plans and to deploy off Florida. USS *Independence* slipped anchor at Norfolk, escorted by four destroyers and various Marine Corps units

As would be expected the resources applied to managing the quarantine were vast. It was enforced by units of Task Force 136, headed by the cruiser USS *Canberra* (CAG-15). TG 136.1 was the main surface group comprising two cruisers and fifteen destroyers. The units of TG.136.1

patrolled the 500 mile *Walnut* line based on 12 stations at 47 mile intervals

The anti-submarine group, TG 136.2 comprised two hunter-killer (HUK) groups based USS *Randolph* (CVS-15) (HUK *Alpha*) with CVSG-58 and CVSG-60 aboard USS *Essex* (CVS-9) (HUK *Bravo*). Each was escorted by four destroyers. (The anti-submarine units were supplemented by USS *Wasp* (CVS-18) on 2 November and USS *Lake Champlain* (CVS-39) on the 18<sup>th</sup>.) Finally, TG 136.3 was the logistic support group comprising two tankers, one ammunition ship and two destroyers.

<b>CVSG-60 USS <i>Essex</i> CVS-9 tail code AW</b>		
VS-34	S-2F Tracker	ASW
VS-39	S-2F Tracker	ASW
HS-9	SH-3A Sea King	ASW
VAW-12 det 9	E-1B Tracer	Early warning
<b>CVSG-58 USS <i>Randolph</i> CVS-15 tail code AV</b>		
VS-26	S-2A Tracker	ASW
VS-36	S-2A Tracker	ASW
VAW-12 det 15	E-1B Tracer	Early warning
HS-7	SH-34J Sea Horse	ASW
<b>CVSG-54 USS <i>Wasp</i> CVS-18 tail code AT (from 2 November)</b>		
VS-28	S-2C Tracker	ASW
VS-31	S-2C Tracker	ASW
HS-11	SH-3A Sea King	ASW
VA-64 det 18	A-4C Skyhawk	Strike
VAW-33 det 18	EA-1B Skyraider	Early warning
HU-2 det 18	UH-25B Retriever	Utility helicopter
VRC 40 det 18	C-1A Trader	COD
<b>CVSG-52 USS <i>Lake Champlain</i> CVS-39 tail code AS (from 18 November)</b>		
VS-22	S-2A Tracker	ASW
VS-32	S-2A Tracker	ASW
HS-5	SH-34J Sea Horse	ASW
VAW-33 det 39	EA-1E Skyraider	Early warning
HU-2 det 39	UH-25B Retriever	Utility helicopter

**Table 3 – TG 136.2**

As might be expected, the surface fleet was only part of the resource applied to locating and tracking both freighters and Soviet submarines. Of the latter at least 30 were judged to be operational with the Northern Fleet and up to ten likely to be in the West Atlantic. The USN brought to bear a number of maritime patrol units and in the north

RCAF Argus aircraft from three squadrons, plus shore-based Trackers were also committed. Much farther away RAF Shackletons monitored Soviet shipping in the eastern Atlantic and North Sea. The total maritime patrol force is listed in the attached table.

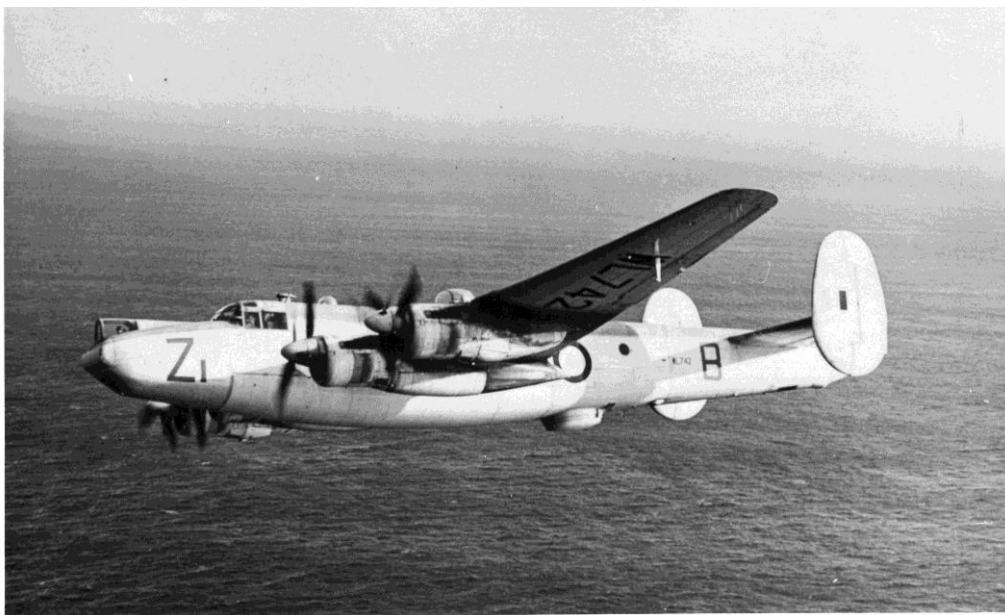


<b>Unit (tail code)</b>	<b>Type</b>	<b>Home base</b>	<b>Crisis base</b>
<b>United States Navy Fleet Air Wing 3</b>			
VP-10 (LD)	P-2E Neptune	NAS Brunswick	Lajes
VP-21 (LH)	SP-2H Neptune	NAS Brunswick	Lajes
VP-11 (LE)	P-2E Neptune	NAS Brunswick	Argentina
VP-16 (LF)	SP-2E Neptune	NAS Jacksonville	Keflavik
VP-23 (LJ)	SP-2H Neptune	NAS Brunswick	Sigonella
VP-26 (LK)	P-2E Neptune	NAS Brunswick	NAS Key West
<b>United States Navy Fleet Air Wing 5</b>			
VP-44 (LM)	P-3A Orion	NAS Patuxent R	NAS Bermuda
VP-8 (LC)	P-3A Orion	NAS Patuxent R	NAS Bermuda
VP-49 (LP)	P-5B Marlin	NAS Bermuda	NAS Bermuda
VP-45 (LN)	P-5B Marlin	NAS Bermuda	NAS Bermuda
VP-30 (LL)	P-5B Marlin	NAS Jacksonville	NAS Key West
<b>United States Navy Fleet Air Wing 11</b>			
VP-56 (LQ)	P-2H Neptune	NAS Norfolk	Leeward Point
VP-7 (LB)	SP-2H Neptune	NAS Jacksonville	Leeward Point
VP-18 (LG)	SP-2H Neptune	NAS Jacksonville	Leeward Point
VP-24 (LR)	SP-2H Neptune	NAS Norfolk	Leeward Point
VP-5 (LA)	P-2E Neptune	NAS Jacksonville	Leeward Point, Roosevelt Roads
<b>United States Naval Reserve (from 27 October)</b>			
VP-721	P-2F Neptune	Glenview, Ill	Quonset Point RI
VP-791	SP-2E Neptune	Memphis, Tenn	NAS Norfolk
VP-811	P-2D Neptune	Minneapolis, Minn	NAS Brunswick
VP-831	P-2E Neptune	New York , NY	NAS Patuxent R
VP-883	P-2F Neptune	Olathe, Kan	NAS Jacksonville
VP-911	P-2E Neptune	S Weymouth, Mass	S Weymouth, Mass
<b>Royal Canadian Air Force</b>			
404 Sqn	Argus	Summerside	
415 Sqn	Argus	Summerside	
405 Sqn	Argus	Greenwood	
<b>Royal Canadian Navy</b>			
VS-880	CS2F-1 Tracker	HMCS <i>Shearwater</i>	HMCS <i>Shearwater</i>
<b>Royal Air Force</b>			
42 Sqn	Shackleton MR.2	St Mawgan	St Mawgan
201 Sqn	Shackleton MR.3	St Mawgan	St Mawgan
206 Sqn	Shackleton MR.2	St Mawgan	St Mawgan
203 Sqn	Shackleton MR.2	Ballykelly	Ballykelly
204 Sqn	Shackleton MR.2	Ballykelly	Ballykelly
210 Sqn	Shackleton MR.2	Ballykelly	Ballykelly
120 Sqn	Shackleton MR.3	Kinloss	Kinloss
224 Sqn	Shackleton MR.2	Gibraltar	Gibraltar

**Table 4 – maritime patrol resources**

Fleet Air Wing 3 flew sorties over the Atlantic extremes monitoring the general flow of shipping. FAW 5 and FAW 11 monitored the *Walnut* quarantine line working in concert with surface vessels. Aircraft of FAW 5 also monitored a large box in the Western Atlantic sitting south of a line from Cape Race in Newfoundland to a point 300 miles west of the Azores. The extreme easterly end of the box was the responsibility of the Canadian Arguses.

The RAF Shackletons were not actively part of any plan although they did increase the watch on Russian shipping around the UK from 20 October. On the 23<sup>rd</sup> the whole force was placed at 6 hours readiness. Then on Saturday 27<sup>th</sup> crews from 42, 201 and 206 sqns were called into St Mawgan for briefing for deployment to the West Indies: in the event they were stood down the following day. It is not known whether this was a unilateral decision or a response to a request from the US.



***Shackleton MR2 WL742/B-Z1 of 42 Sqn on patrol***

The first vessel to be challenged was the tanker *Bucharest*, stopped by USS *Gearing* (DD-710) on 25 October, but allowed to proceed when the cargo was confirmed to be oil. On Friday the 26th the first vessel to be stopped and searched was the Lebanese freighter *Marucla* boarded from USS *Joseph P Kennedy* (DD-850). It was cleared after checking. Gradually, vessels slowed or turned,

but the horse had already bolted. Of freighters which had docked in Cuban harbours in the preceding few weeks *Krasnograd* had carried SS-4s, *Kasimov* and *Leninsky Komsomol* II-28s and *Indigirka* and *Alexandrovsk* warheads for the SS-4s and the shorter range tactical missiles. Each of the latter vessels was armed with two 37mm cannon for defence.

In respect of submarines there was very real reason to be concerned and their deployment almost led to nuclear disaster. In Operation *Kama* four Project 641 (NATO *Foxtrot*) submarines (B-4, B-36, B-59 and B-130) of the 4<sup>th</sup> Submarine Squadron

had departed Murmansk for Cuba. Intended to pave the way for the establishment of a base at Mariel harbour for seven Project 629 (*Golf*) SSNs, they were each armed with one 15KT nuclear-headed torpedo in addition to their normal armament.



#### ***Marucla trailed by USS Joseph P Kennedy 26 October***

During the summer the Russians had conducted an extensive naval exercise in the Eastern Atlantic, closely monitored by RAF Shackletons in Operation *Tiara*. In subsequent operations, *Garbutt* and *Garnet*, the Shackletons tracked the submarines as they returned to their bases. The four Foxtrots departed Murmansk on 1 October and appear to have slipped through the Greenland-Iceland-UK (GIUK) gap, and were not picked up until around the 20<sup>th</sup>.

Once in the area to the west of Bermuda the submarines were

instructed, by sealed order, to patrol the Sargasso Sea. On the 25<sup>th</sup> the Americans sent the Soviets a note to the effect that small explosive charges would be dropped on suspect submarines as a warning to surface and be identified. The USN hunter-killer (HUK) group *Bravo* based on *Essex* was operating near the Bahamas and directing patrol aircraft from shore bases. On the 26<sup>th</sup> a P-3A dropped a sonobuoy pattern in an area believed to hold a Foxtrot and after several hours contact was made, but then lost.



The next contact was with B-59, caught by *Randolph's* Trackers and then in effect handed over to the ASW destroyers which dropped the five-pattern warning charges. The submarine surfaced and was escorted eastwards. Then B-36, with the sail number 911, was caught 400 miles north of Puerto Rico by Neptunes of VP-5 and the USS *Charles P Cecil* (DDR-835) and forced to surface. After several days and having re-charged its batteries the submarine submerged and headed for home.

B-130, sail number 945, was spotted by units of the HUK *Bravo* some 300 mls NE of the Caicos

Passage on 30 October. With only one diesel engine operable the vessel was forced to surface after having been consistently attacked with warning grenades by USS *Blandy* (DD-843) and in the process the captain had decided to load the special torpedo ready for launch. (Communications with Moscow were poor in the extreme and the captain had no idea of whether or not the Soviet Union was at war with the US.) In the event wiser counsel prevailed at the last minute and catastrophe narrowly avoided as the submarine ambled off to rendezvous with the tug *Pamir* (SS-20).



***P5M Marlin on VP-45 accompanying DD-835 USS Charles P Cecil tracking a Foxtrot class submarine***

By now Krushchev had acceded to US demands and the task of the USN turned from enforcing the quarantine to monitoring the removal of missiles, their warheads and then later the Il-28 bombers. As it became clear that the Cuban Air Force Il-28s did not pose a threat the quarantine line was adjusted westwards to 150 miles out and renamed *Chestnut*.

The deal for termination of the confrontation depended on inspection of the missile sites, something not allowed by Castro who had not been privy to the Soviet climb-down. By 9 November all 42 SS-4 missiles were shipped out on eight vessels including *Dvinogorsk*, *Volgoles* and *Fizik Kurchatovsk* and later the bombers on, among others, the *Okhotsk*. Fortunately the missiles had to be shipped as deck cargo so that their removal could be verified: Castro had refused observation of dismantling in Cuba. The monitoring became international when Venezuela and Argentina added warships to TF.137.

As first the missiles and warheads, then the bombers, were removed the US gradually ran down its quarantine force.

### **The strategic response**

An initial priority was to remove SAC aircraft from bases in the Florida Military Emergency Zone to free up ramp space for the influx of reconnaissance and tactical support aircraft. B-52s left McCoy and Homestead with their tankers and 26 B-47s of the 306<sup>th</sup> BW departed MacDill for Georgia. On 20 October two aircraft from each of the B-52 wings were placed on standby ground alert at Emergency War Order (EWO) nuclear payload status pending a presidential decision on action.

Decision came on 22<sup>nd</sup> and at 1700 EDT SAC was ordered to introduce a one eighth airborne alert for the B-52 wings under the so-called *Chrome Dome* indoctrination. There were to be three routes flown to the Soviet Union – Thule (two aircraft), the northern route (28 aircraft) and southern route (36 aircraft). To service the bombers their associated KC-135 tankers were deployed to Eielson in Alaska, Westover, Griffiss and Loring AFBs in the north-eastern US and to Moron and Torrejon in Spain. At the same time across the US the larger (45 aircraft) B-47 wings dispersed to 32 civilian airports and reserve bases in a process developed in the *Clutch Pedal* program. In the evening of 24 October SAC unilaterally moved to Defence Condition (DefCon) 2 the highest alert state before imminent nuclear war. The change was managed covertly, thus no post-attack command and control aircraft were launched, neither were TDY aircraft or crews recalled from overseas or aircraft from special assignments like the nuclear test program (*Dominic*) or top-secret KC-135 *Speed Light* reconnaissance mission. Combat crew training was halted, however.

From the 23<sup>rd</sup> the number of sorties required to maintain the airborne alert was 66 rising to 69 by the 28<sup>th</sup>. Through November the number settled at 75 as B-52H models were returned to service following corrosion problems. By 25 October 1,436 bombers, 145 strategic missiles and 916 tankers were EWO ready. This was a highly demanding number and almost from the outset problems were encountered. Rigid standards on aircraft serviceability had to be relaxed from the 24<sup>th</sup> in order that the right balance of weapons/targeting could be maintained.

The Air Force worked to a Single Integrated Operation Plan (SIOP) which spread targets and thus appropriate weapons between the bomber and missile forces. The SIOP was co-ordinated with RAF plans so that there was no duplication of effort.

An airborne alert aircraft having to abort could not easily be replaced by a ground alert machine since each airborne alert bomber carried a particular weapons load with the crew briefed for a specific target. Weapons, which included the Mk.15, Mk.28 and Mk.39 bombs, AGM-77 ALCM (W-28 warhead) and AGM 72 decoy, took a considerable time to remove from secure storage and install. Further, the weapons were fused in different ways for high or low-level attack and some were retarded. The alert plan called for ten aircraft to carry the AGM-77 and 24 the AGM-72. The 84 strong B-58 force was on ground alert only, armed with the Mk.39 or Mk.53 bomb.

Notwithstanding the precise demands the airborne alert was maintained at around 97% throughout and a total of 2,088 B-52s was launched, flying 47,168 hours. The tankers were flying over 130 sorties daily, mainly from Spain. 41 of the dispersed B-47s were brought into first-cycle EWO status by 2 November with 87 KC-97s allocated in support. (These tankers were deployed to Goose Bay (41), Ernest Harmon AFB, Newfoundland (34) and Lajes which gives some clues as to routeing and destinations. There were problems on the dispersed sites which hindered immediate effectiveness including a shortage of security personnel and limited communications.

A significant part of the nuclear forces were the strategic missile units, mainly spread around central states. On 19 October the number of operational missiles was 112 ICBMs (77 Atlas, 35 Titan). The number had

increased to 132 by the 22<sup>nd</sup> and 167 the following day, mainly through bringing into Emergency Combat Capability (ECC) training missiles managed by Air Force Systems Command (AFSC). Peak strength was reached on 3 November with 186 missiles including the first solid-fuel Minuteman ICBMs.

Bringing the ICBMs to readiness could not be managed covertly. Depending on liquid oxygen (LOX), a number was always in maintenance or for training fuelled with liquid nitrogen. Securing and transporting large volumes of LOX at short notice was inevitably visible. Rather surprisingly, during the crisis two Atlas missiles were test-launched from Vandenberg AFB in California, on 26 October and 14 November.

Combat crew training resumed on 15 November and SAC terminated the airborne alert on 21 November, reverting to DefCon 3, then to DefCon 4 on the 27<sup>th</sup>.

The UK ambassador to the US was briefed on Sunday 21 October as to the situation, but it is possible that the higher echelons of Bomber Command were already aware of an impending crisis. Thus the Royal Air Force contributed in a small way.

The V-bomber force of some 144 aircraft – less 10 temporarily overseas – was brought to 15 minute readiness, but not until 27 October. The bombers were based on ten airfields and there was provision for numbers to be dispersed to 26 airfields across the UK, four to each. Prime Minister Harold Macmillan resisted the dispersal and a visibly higher state of readiness. The main bases were routinely observed by spies and he had no wish to present the wrong signals to the Kremlin. On 29 October the number of aircraft at 15 mins readiness was doubled.

Of the bomber force, three squadrons of Valiants at Marham (49, 148 and 207) were armed with American bombs, under US supervision, and committed to NATO through Supreme Allied Commander Europe (SACEUR), US General Lauris Norstad. In theory Norstad could have launched the Marham Valiants: in practice he kept NATO forces at a relatively low level of alert.

In addition to the bombers were 60 SM-75 Thor IRBMs, in effect forward based US weapons, but under dual-key operation. 59 missiles were readied, but as in the US, stocks of LOX presented problems so that as the crisis continued, readiness tailed off. Both bombers and missiles reverted to Alert State 4 on 5 November.

Also in the UK the USAF tactical and Reflex Alert units were also brought to a war footing and up to 11 B-47s were armed. The USAFE tactical units in the UK equipped with the F-100 (20 TFW Wethersfield: 48 TFW Lakenheath) and F-101 (81 TFW Woodbridge/Bentwaters) were also brought to readiness and their nuclear weapons prepared. The USN Polaris

submarines quietly slipped their moorings at Holy Loch for battle stations.

### **Fortress Florida and TF.135**

As the US became aware of the possible Cuban threat through the summer of 1962 several plans were devised to take the initiative. All were to be managed by CINCLANT. OPLAN 312-62 provided for a series of scaled air strikes (I strikes on SAM sites – *Fire Hose*; II additionally airfields and IRBM sites – *Shoe Black*; III widespread strikes – *Scabbard*). OPLAN 314-62 and OPLAN 316-62 were plans for a unified invasion of Cuba.

To support the defence of Guantanamo and any prospective invasion CVG-7 was embarked on USS *Independence* (CVA-62) and CVG-6 on USS *Enterprise* (CVAN-65). *Enterprise*, which had exchanged its A-5A Vigilants of VAH-7 for the more versatile Skyhawks of VMA-225, was relieved by the newly re-fitted USS *Saratoga* (CVA-60) from 5 December. The following table shows the full complement of the carriers.

<b>Unit</b>	<b>Type</b>	<b>Role</b>
<b>CVG-6 USS Enterprise CVAN-65 tail code AE</b>		
VF-33	F-8E Crusader	Fighter
VF-102	F-4B Phantom	Fighter
VA-34	A-4C Skyhawk	Strike
VA-66	A-4C Skyhawk	Strike
VMA-225	A-4C Skyraider	Strike
VA-35	A-1E Skyraider	Strike
VAW-12 det 14	E-1B Tracer	Early warning
HU-2 det 65	UH-25B Retriever	Utility helicopter
<b>CVG-7 USS Independence CVA-62 tail code AG</b>		
VF-13	F-8C Crusader	Fighter
VF-84	F-8C Crusader	Fighter
VA-64	A-4C Skyhawk	Strike
VA-72	A-4C Skyhawk	Strike
VA-75	A-1E Skyraider	Strike
VAH-11 det 8	A-3B Skywarrior	Heavy attack
VAW-33 det 62	EA-1E Skyraider	Early warning
HU-2 det 62	UH-25B Retriever	Utility helicopter
<b>CVG-3 USS Saratoga CVA-60 tail code AC (from 5 December)</b>		
VF-31	F-3 Demon	Fighter
VF-32	F-8D Crusader	Fighter
VA-34	A-4C Skyhawk	Strike
VA-36	A-4C Skyhawk	Strike
VA-35	A-1E Skyraider	Strike
VAH-9 det 60	A-3B Skywarrior	Heavy attack
VAW-12 det 60	EA-1E Skyraider	Early warning
VFP-62 det 60	RF-8A Crusaderr	Photo-recce
VAQ-2 det 60	EA-3B Skywarrior	ECM
HU-2 det 60	UH-25B Retriever	Utility helicopter

**Table 5 – TF 135 carriers**

The USAF component of the intended strike force deployed to bases in Florida in October. It comprised 495

fighter-bombers of Tactical Air Command (TAC) supported by 40 tankers dispersed as shown.



Unit	Type	Home base	Deployed
435 TFS 479 TFW	F-104C Starfighter	George AFB	NAS Key West
559 TFS 12 TFW	F-84F Thunderstreak	MacDill AFB	based
47 TFS 15 TFW	F-84F Thunderstreak	MacDill AFB	based
4 TFW	F-105B Thunderchief	McCoy AFB	Seymour-Johnson AFB
31 TFW	F-100D Super Sabre	Homestead AFB	based
474 TFW	F-100D Super Sabre	Cannon AFB	Homestead AFB
401 TFW	F-100D Super Sabre	England AFB	Homestead AFB
474 TFW	F-100D Super Sabre	Cannon AFB	Homestead AFB
474 TFW	F-100D Super Sabre	Cannon AFB	Homestead AFB
4510 CCTW	F-100D Super Sabre	Luke AFB	Homestead AFB
27 TFW	F-100D Super Sabre	Cannon AFB	Homestead AFB
354 TFW	F-100D Super Sabre	MyrtleBeach AFB	McCoy AFB
622 ARS 4505 ARW	KB-50	England AFB	MacDill AFB
427 ARS 4505 ARW	KB-50	Langley AFB	McCoy AFB

**Table 6 – USAF strike units in Florida**



### ***F-104C of 479 TFW***

Together with the USN attach units, these were the aircraft that would strike at military sites and, if invasion was ordered, would support the landing forces. In the event. There were in addition several USMC A-4D

squadrons in Florida including VMA-121 (NAS Cecil Field), VMA-142 (NAS Jacksonville) and VMA-242 (NAS Key West) plus the displaced A-5As of VAH-7 at NAS Sanford..

The amphibious components of an invasion comprised a Marine Expeditionary Force incorporating the 2<sup>nd</sup> Marine Division and 2<sup>nd</sup> Marine Air Wing. Elements of **Marine Air Group (MAG) 26** were already in the Caribbean for amphibious exercise PHIBRIGLEX-62 which was cancelled early in October. The two helicopter assault ships present were joined by a third as follows.

**USS Okinawa (LPH-3)** HMM-264 12 UH-34 Choctaw, 4 H-37 Mojave, 2 OH-43 Huskie

**USS Thetis Bay (LPH-6)** HMM-261 12 UH-34

**USS Boxer (LPH-4)** HMM-263 20 UH-34, 4 H-37, 5 OH-43, 9 O-1 Bird Dog, plus spare UH-34s for HMMs-261 and 264

In addition the Pacific-coast based **MAG-36** was readied and **USS Iwo Jima (LPH-2)** sailed with 5<sup>th</sup> MEB reaching the Caribbean by 11 November. Embarked were HMM-361 with the UH-34 and VMO-6 with H-13L

Sioux. The USMC units at NAS Key West comprised **MAG-14**.

The final component was **MAG-32** based on McCalla Field, Guantanamo Bay and Roosevelt Roads, Puerto Rico from 23 October. The role of this group was to defend the bases in the event of attack and to support a break-out in the event of the invasion plan being implemented. MAG-32 comprised VMF-333 (F-8A), VMA-251 (A-4C), VA-35 (A-1E), VMCJ-2 (EF-10B) and in Puerto Rico VMA-331 (A-4D).

An invasion would have also included the 82<sup>nd</sup> and 101<sup>st</sup> Airborne Divisions, and armoured division and an infantry division and by 28 October preparation were well in hand at their home bases.

Given the forces gathered in the south-eastern United States there were 154 fighters of all services based in Florida all under Continental Air Defense Command (CONAD) control. A small number of fighters was kept flying with 26 on five minute alert and the balance between 15 minutes and three hours.

Unit	Aircraft	Home base	Deployed
<b>USN and USMC</b>			
VMF -?	F-3A Demon		NAS Key West
VMF-? Det	F-8A Crusader		NAS Key West
VF(AW)-3	F-6A Skyray	NAS North Island	NAS Key West
VF-41	F-4B Phantom		NAS Key West
VF-62	F-8A Crusader		NAS Cecil Field
VF-31	F-3A Demon		NAS Cecil Field
<b>USAF</b>			
435 TFS, 479 TFW	F-104 Starfighter	George AFB	NAS Key West
482 FIS	F-102A Delta Dagger	Homestead AFB	Based
48 FIS	F-106A Delta Dart	Langley AFB	Patrick AFB

**Table 7 – air defence, Florida**

In the event Cuba did not attack Guantanamo or the mainland, and air strikes against Cuba were not

necessary after Khrushchev had conceded.

## The outcome

At 1000hrs on the 28th the crisis ended as the Russians agreed to dismantle the missiles, under inspection. Khrushchev accepted the American terms for the removal of offensive weapons in exchange for

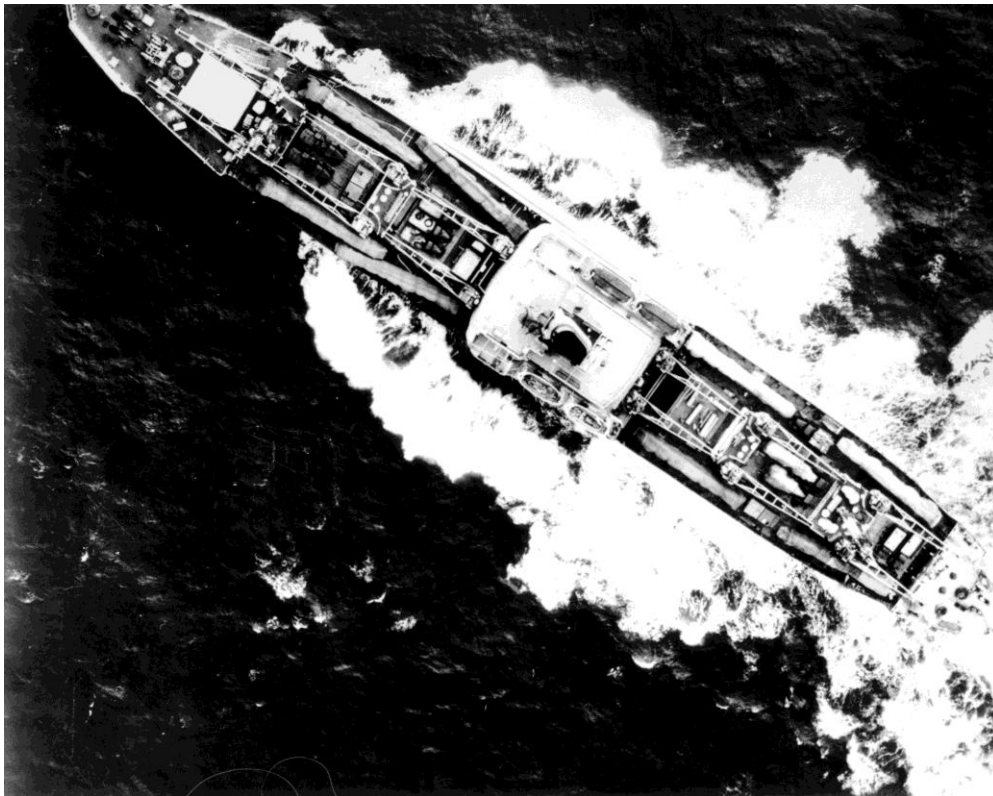
guarantees that the US would not invade Cuba. Privately the deal extended to US agreement to withdraw the Jupiter missiles from Turkey and Italy which given their vulnerability and obsolescence was planned in any event., which had previously been ordered.



### ***Shadow of RF-101C of 29 TRS monitoring re-loading of vessels at Casilda***

The freighter *Divinogorsk* sailed from Mariel with four SS-4s on 5 November, eight more missiles left on the 7th on the *Metallurg Anosov*, and six on the 9th on board the *Bratsk*. The I1-28s, however, were still under construction, and the

quarantine was not lifted until 20 November, by which time the Russians had reluctantly agreed to their removal. The first aircraft left Cuba in crates on 15 December aboard the *Kasirnov*



***Metallurg Anosov returning to Russia with SS-4s visible 21 November 1962***

Although the crisis centred around missiles, it was conventionally equipped aircraft that gave Kennedy a range of response options. Large numbers of machines were deployed by all services, and the whole Soviet withdrawal was monitored by aircraft. During the period 14 October to 6 December, the USAF flew 102 U-2 sorties over Cuba, but low-flying aircraft were able to supervise the operation with a versatility unmatched by more remote observation. The following year the superpowers agreed to install the 'hot line' telephone link, and as further evidence of the thaw in relations a nuclear test ban agreement was signed in August.

There were some close calls: errors which could have precipitated war in such a sensitive situation. A U-2 flying over Arctic ice-cap suffered a navigation error resulting in it closing on the USSR before being recalled to Alaska but not before Russian fighters had been scrambled. Then there were the missile launches from Vandenberg. On 28 American AN/FPS-49 radar at Moorestown NJ detected an incoming missile from Cuba: in fact a simulation tape! Finally, the Russians could have triggered a response when they shot down Anderson's U-2 or when the submarine B-130 came close to launching a nuclear tipped torpedo.



***Crewmen on Kasimov uncover crates to show Il-28 bombers 15 December 1962***

It has been reported that early in the crisis Kennedy was reading *The Guns of August* by Barbara W Tuchman, in which the author describes the opening of the Great War. The recounting of the arrogance, poor intelligence, misunderstandings and

false assumptions which led to the most appalling slaughter 100 years ago may well have given the President cause to stand back and stay his hand.





***P-3A Orion of VP-44 and a USN destroyer shadowing Metallurg Ansonov as she departs the Caribbean***

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