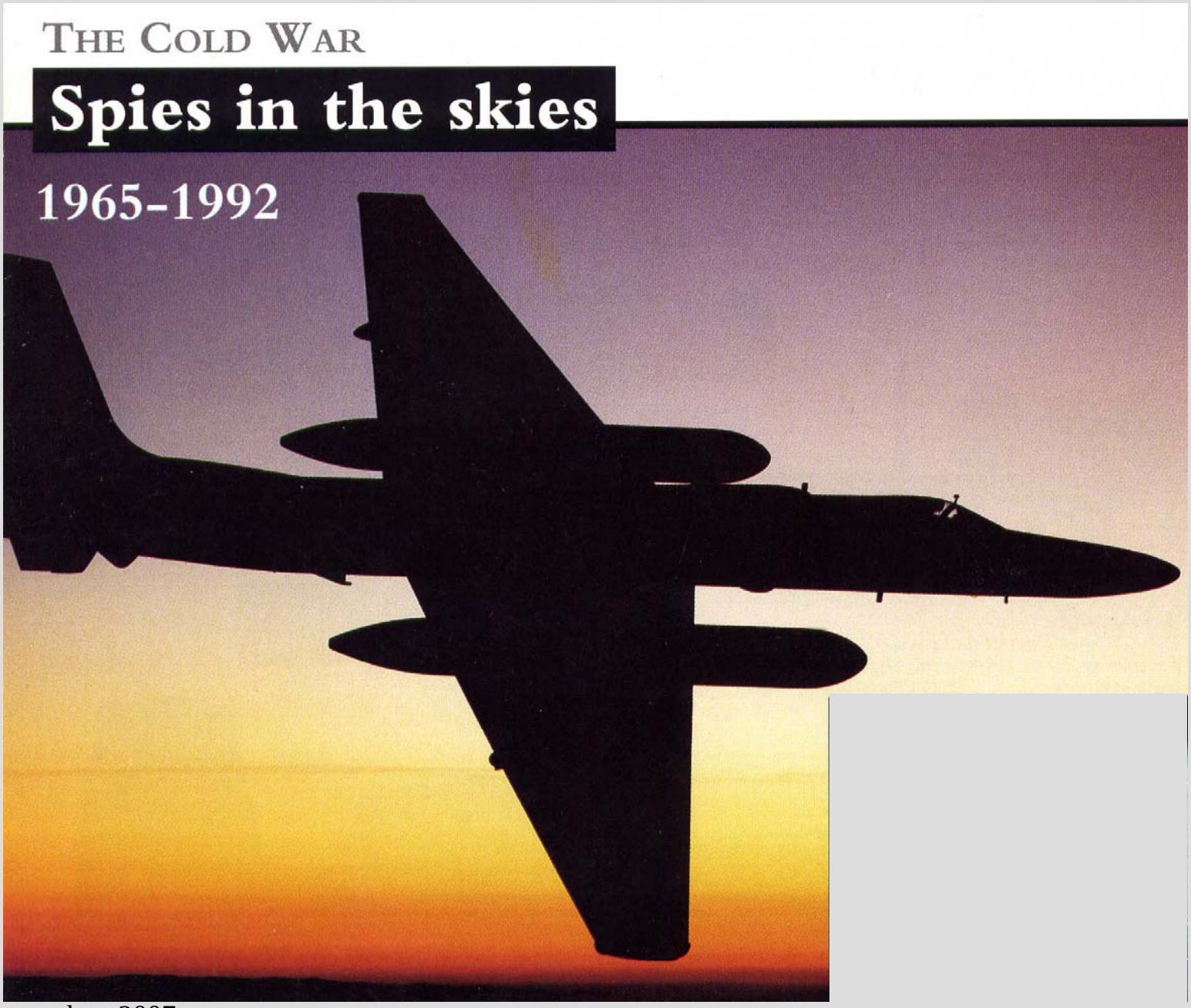
THE COLD WAR

Spies in the skies

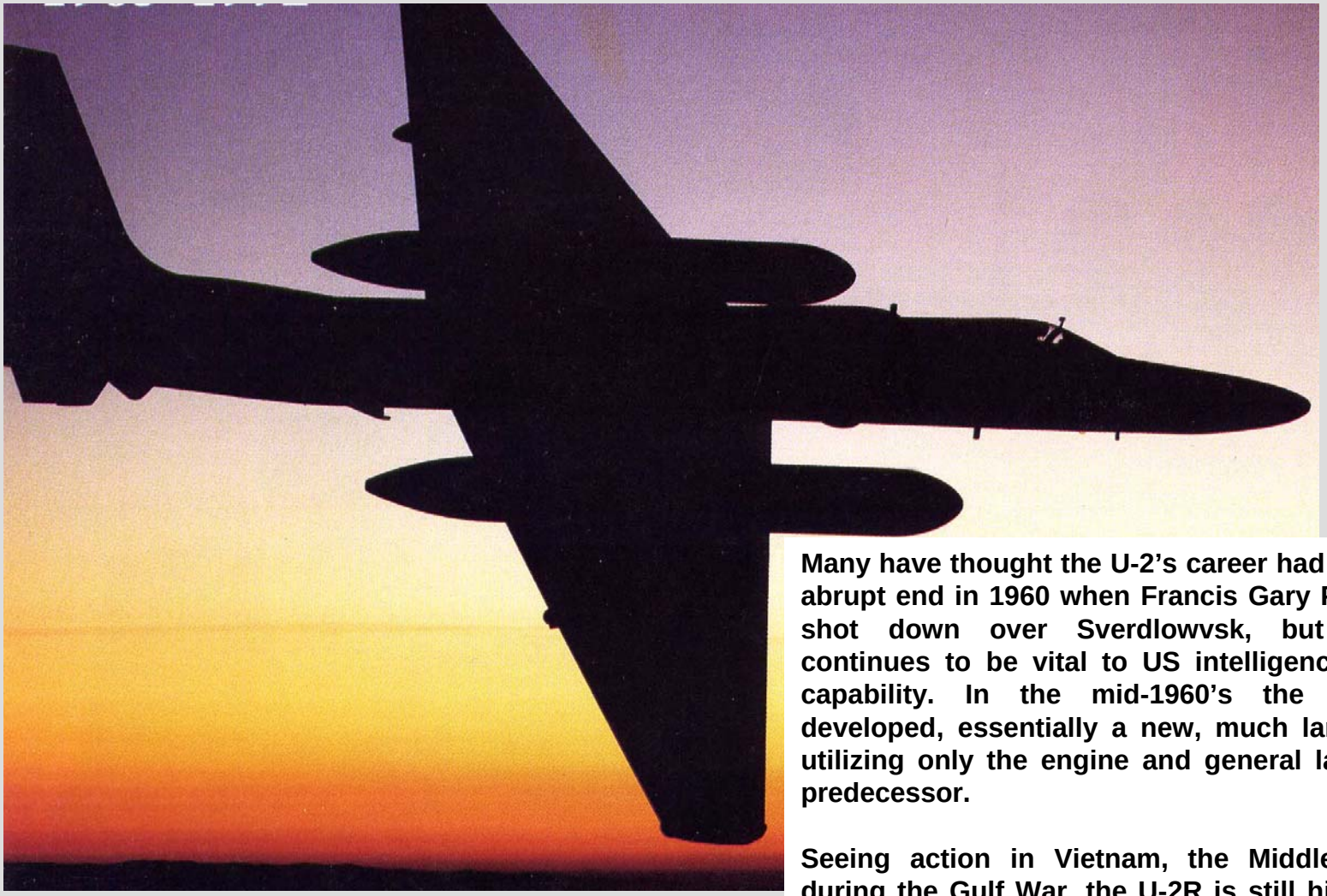
1965-1992



THE COLD WAR
12 – SPIES IN THE SKIES

MAIN TOPICS COVERED

1. SHEDDING LIGHT
2. ELECTRONIC SPYING
3. WATCH ON CHINA
4. SCALED-UP DRAGON
5. ELECTRONIC C-135
6. NAVAL EW PLATFORMS
7. BOMBER CONVERSIONS



Many have thought the U-2's career had come to an abrupt end in 1960 when Francis Gary Powers was shot down over Sverdlowvsk, but the type continues to be vital to US intelligence-gathering capability. In the mid-1960's the U-2R was developed, essentially a new, much larger design utilizing only the engine and general layout of its predecessor.

Seeing action in Vietnam, the Middle East and during the Gulf War, the U-2R is still highly prized for its ability to produce Comint, Elint and radar imagery from high-altitude.

SPIES IN THE SKIES

SHEDDING LIGHT

- Modern Reconnaissance is split into two main areas of activity:
  - 1. Strategic Reconnaissance
    - Designed to help create the 'big picture'
    - For high commands and national authorities
  - 2. Tactical Reconnaissance
    - Dedicated for providing operational & tactical information
    - For ground forces
- Three(3) Intelligence varieties:
  - 1. Humint (Human Intelligence) – agents in target countries gathering a wide variety of information.
  - 2. Imagery – obtaining photographic, infra-red, radar images. (by major means of Aircraft & Satellites)
  - 3. Sigint (Signals Intelligence) – covers communications intelligence, electronic intelligence, telemetry intelligence, etc.

SPIES IN THE SKIES

SHEDDING LIGHT

- **Reconnaissance…**
- **Basic + oldest-established form of recon. Involves making images of a target area.**
- **In old ballooning days, it involved man w/paper & pencil making sketches.**
- **Today the black & white camera is still important recon tool.**
- **Long focal lengths, high-tech optics, super-thin film mean satellites in orbit can take pictures resolutions of 3 in from range of 240m.**
- **('you can't read newspaper, but can see the headlines…')**
- **Modern equip. can produce images of almost photographic quality.**
- **Television cameras can also see the scene today in real-time.**

Illustrating the type of reach the U-2R's sensors can provide is this image of San Francisco Bay taken by a NASA-operated ER-2 (a derivative of the U-2R)

SPIES IN THE SKIES

ELECTRONIC SPYING

- **Sigint (signals intelligence) – Various forms w/ deliberate & accidental transmissions:**
  - **Comint (Communications Intelligence) = eavesdropping on potential opponent's radio traffic.**
    - **Comint Acft sucking up info on all wavebands, recording for later analysis.**
  - **Telint (Telemetry intelligence) = involves interpretation of guidance data transmitted between missiles and ground control during tests.**
    - **Analysis of data can give precise details of missile's performance (great for arms treaties negotiations)**

SPIES IN THE SKIES

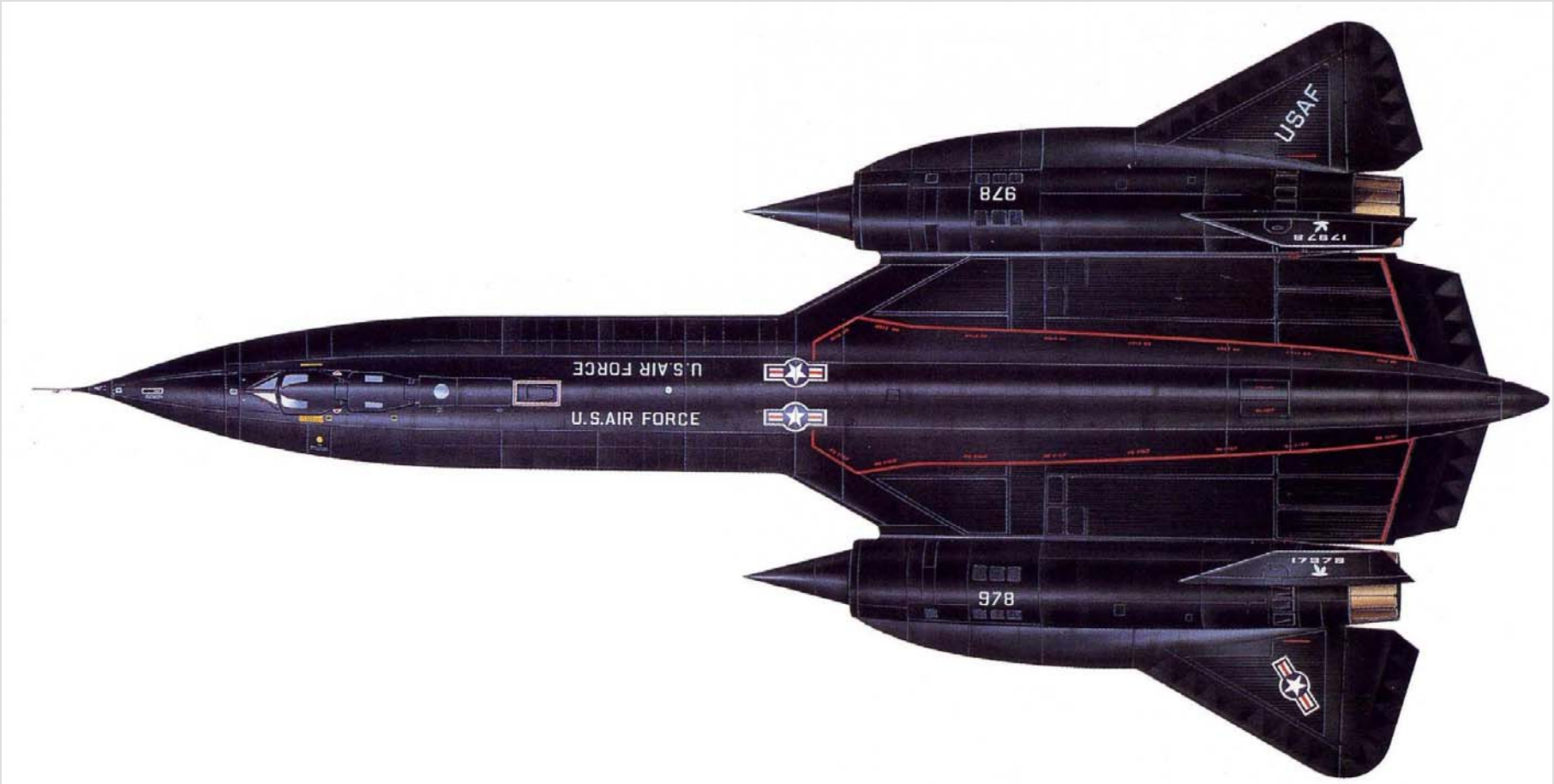
ELECTRONIC SPYING

- **Primary purpose of Strategic Reconnaissance:**
  - to enable national command authority to assess military capacity of a target nation during peacetime.
  - to continue such a task if war breaks out.
  - to carry out this operation continuously over long period of time = surveillance.
- **Strategic Reconn platforms…**
  - need to gather info about as wide as possible on a single pass
  - they have in past tended to be high-altitude, such as Lockheed U-2 + SR-71 (Blackbird)

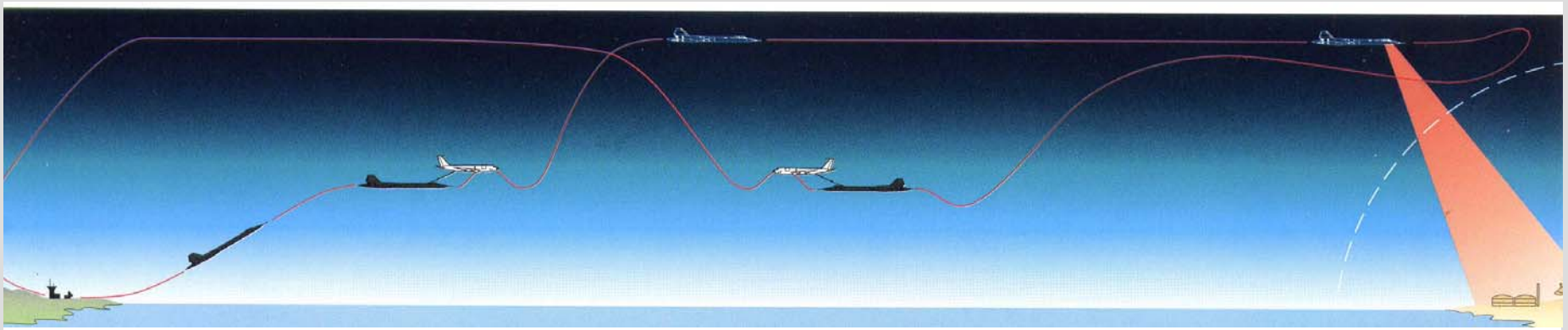
SPIES IN THE SKIES

ELECTRONIC SPYING

- Conceived in 1959 (as successor to U-2): SR-71
  - Flies faster than Mach 3 / over 100,000 ft.
  - When retired… still ahead of its time.
  - Its pre-series acft was CIA's A-12 (Single-seat)
    - Flown first in 1962 for reconn for 'China Curtain' (early 1960's)
    - Operated from Okinawa until replaced by SR-71 in 1968.
    - China overflights ceased in 1971 (took over by SAC).
  - Blackbird never a serious intercept threat, but was never use to overfly Soviet airspace, but unlike A-12 flew along borders. Probed deep with long-range sensors.
  - On September 1, 1974, the SR-71 set a record from New York to London in 1 hour, 54 minutes, and 56.4 seconds.



PERFORMANCE: The SR-71 is restricted in normal operations to Mach 3.2, but the aircraft can go faster. Its predecessor, the single-seat A-12 'Cyprus', was lighter and marginally faster, being clocked at Mach 3.56 although it was restricted in operations to Mach 3.3. The A-12 could also sustain an attitude of 27,320m (90,000 ft) with ease.

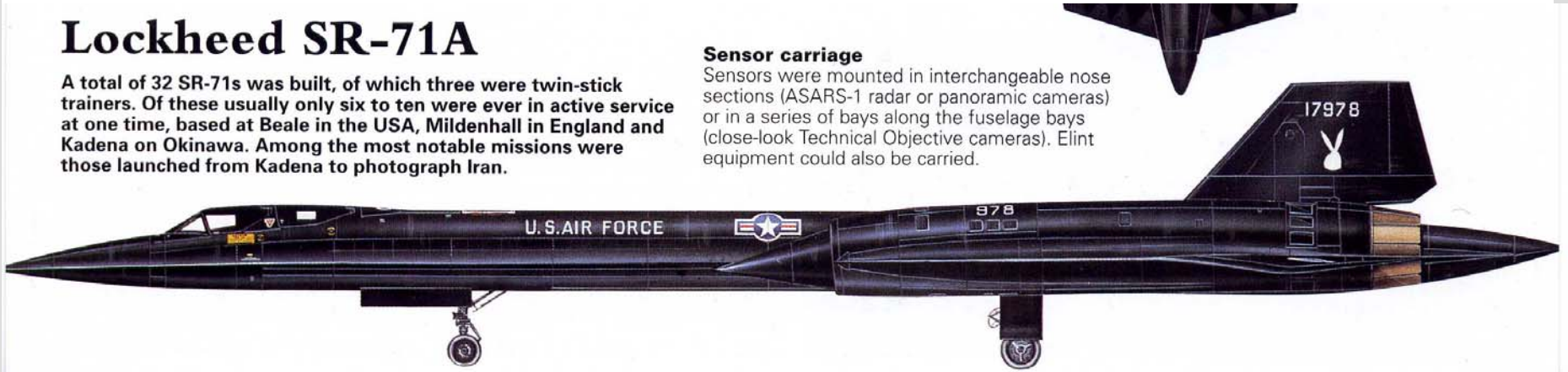


A Typical SR-71 mission shows the aircraft refueling soon after take-off to top off its tanks before 'going hot' for its sensor pass on the target area. The aircraft then has to descend for another refueling to enable it to reach its base safely. The aircraft usually stays outside hostile airspace, using its altitude to peer many miles inside the target territory. During overflights, the great speed keeps it safe from SAMs.

Lockheed SR-71A

A total of 32 SR-71s was built, of which three were twin-stick trainers. Of these usually only six to ten were ever in active service at one time, based at Beale in the USA, Mildenhall in England and Kadena on Okinawa. Among the most notable missions were those launched from Kadena to photograph Iran.

Sensor carriage
Sensors were mounted in interchangeable nose sections (ASARS-1 radar or panoramic cameras) or in a series of bays along the fuselage bays (close-look Technical Objective cameras). Elint equipment could also be carried.



Stealth features
The shape of the SR-71 was tailored to reduce its radar cross-section, while the structure incorporated large wedges of radar-attenuating material.

Powerplant
Power came from two Pratt & Whitney J58 bleed-bypass turbojets. These featured huge moveable inlet spikes.

From its three bases worldwide, the SR-71 could easily reach all the normal trouble spots, and with planning could be expected to visit anywhere else. At Beale the aircraft launched regularly on 'Clipper' sorties around Cuba, and was also briefly used over Nicaragua. From Mildenhall the SR-71 regularly covered the German border, Baltic Sea and North Cape, and ventured into the Mediterranean when required. The Kadena-based "Habus' plied their trade along the Pacific Rim, targeting Vietnam, China, North Korea and the Soviet Far East. The longest missions were those flown from Kadena to the Persian Gulf, and be aircraft launching from the Eastern US seaboard to the Suez canal zone. The latter provided intelligence to the Israelis during the Yom Kippur War, and had to be flown from the US as the UK denied the use of its bases.

Both U-2 (illustrated) and SR-71 aircrew wear David Clark pressure suits to protect them in the event of cockpit depressurization at altitude. The suits are fully sealed, with an orange-colored outer covering to protect them.

First seeing service in 1968 over Vietnam, the Lockheed SR-71 is the world's fastest air-breathing aircraft, combining this performance with an even greater operational altitude than that of the U-2. This type has been used in all of the world's hot spots.

The Lockheed Skunk Works was responsible for both the U-2 and SR-71. Here the ASARS-2 radar developed U-2R flies in a rare formation with the resident Palmdale test SR-71. Both types serve operationally with the 9th Reconnaissance Wing at Beale AFB, CA.

SPIES IN THE SKIES

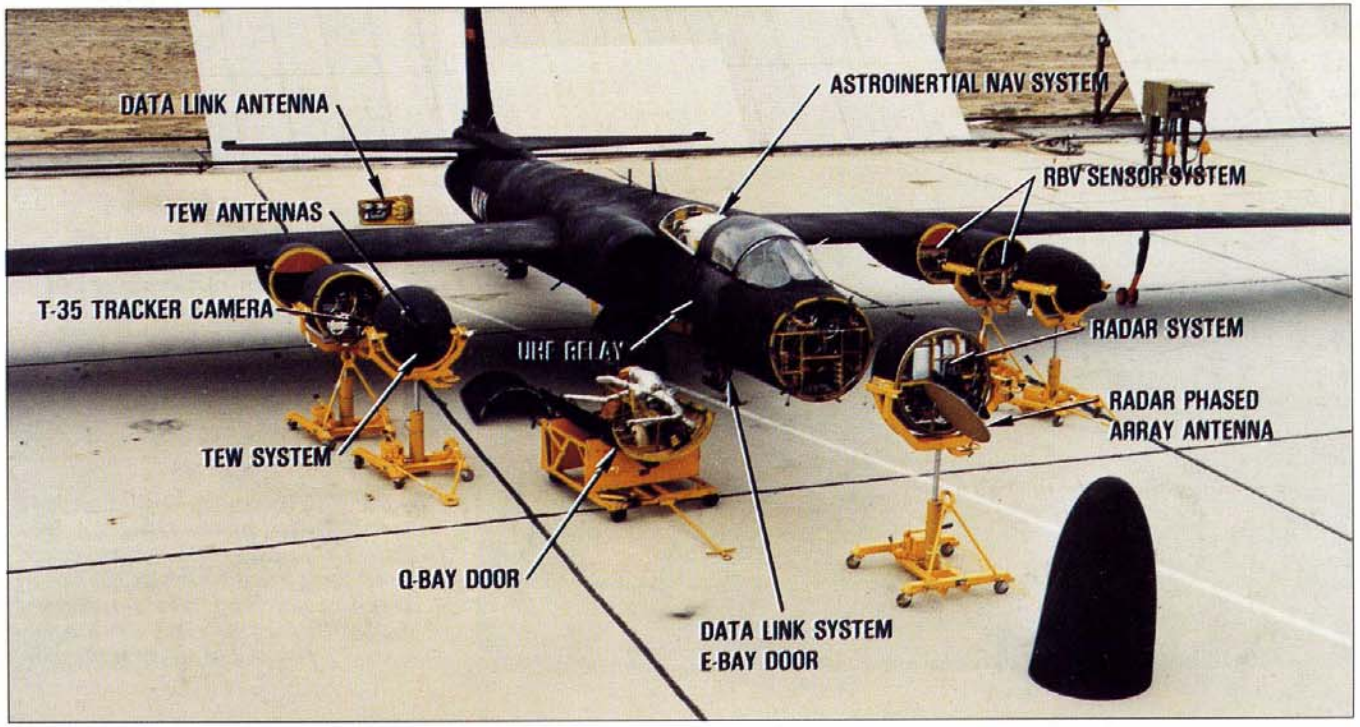
WATCH ON CHINA

- U-2 remains an important platform.
- CIA U-2s played crucial role in Cuban Missile crisis.
- U-2s over China mounted from Taiwan using mix of American/Nationalist Chinese pilots.
- China bagged number of USAF recon 'Lighting Bug' (Ryan Firebee Drone) from 1964 on.
  - Launched from modified DC-130 Hercules.
  - Flew high-altitude photo runs over eastern China.
  - Recovered by helicopters over friendly territory.
  - Despite successes, USAF bureaucracy heavily favored manned systems.

When designing the U-2R, Lockheed engineers made the aircraft easier to land than its predecessors although it still takes a skilled pilot. Visible in this view is the rear-view mirror for checking if the aircraft is pulling a contrail, and the underfuselage glass dome for the driftsight optics.

High Flyers

Apart from the two SR-71As which were returned to service in 1996, the USAF's U-2 is the only high-altitude reconnaissance platform in service today. The modular payload carriage, illustrated by this U-2EPX (a cancelled US Navy maritime patrol variant), provides the U-2 with great versatility. Imaging sensors include the ASARS-2 radar and SYERS camera, either of which can be carried in the nose. The former produces picture-quality radar images, and now includes a moving-target function for spotting vehicles on the move. The SYERS is a very long focal length optical sensor recording data electronically rather than on film. A wide-band Comint and Elint system is usually carried to provide synergistic multi-sensor coverage across long distances. Data can be downlinked to ground stations for real-time analysis, or uplinked via the Senior Span equipment (carried in a dorsal fairing) to satellites for global relay. In the 1990s the fleet was re-engined, raising the designation to U-2S.



During the Vietnam War the 100th SRW made widespread use of Ryan AQM-34 drones to gain photographs and Elint data over North Vietnam. The drones were launched from Hercules and recovered by Sikorsky CH-3 helicopters. This aircraft was the high-time drone with 68 missions.

The Yakovlev Yak-25RD 'Mandrake' was the Soviet equivalent of the Martin RB-57D. It was a long-winged version of the Yak-25 fighter, and was used on some high-altitude missions in the Middle East. The aircraft could not match the U-2 for altitude or range capability.

SPIES IN THE SKIES

SCALED-UP DRAGON

- U-2R was scaled-up version – took over Elinint monitoring task out of Osan AB; played parts in Vietnam.
- One sent to Akrotiri (1970) monitoring Israel-Egypt cease fire; returned there after 1973 Yom Kippur War.
- Bulk of intel used in strategic planning = satellites.
  - Look for wide range of military expansion
  - Major troop movements / setting up new missile batteries
  - Militarily significant economic changes
    - Factories producing ammo going to 3 shifts 24-hour production

SPIES IN THE SKIES

SCALED-UP DRAGON

- …boundary between Tactical + Strategic reconn slightly blurred.
  - Tac reconn carried out for Battlefield commanders / uses variants of high-perf acft.
  - Strategic systems can also be used for tactical.
  - TR-1 (version of U-2), reproduced in the 1980's to provide for battlefield commanders.
  - SR-71's checked hostile defences prior to action in: Grenada, Libya, Panama.

SPIES IN THE SKIES

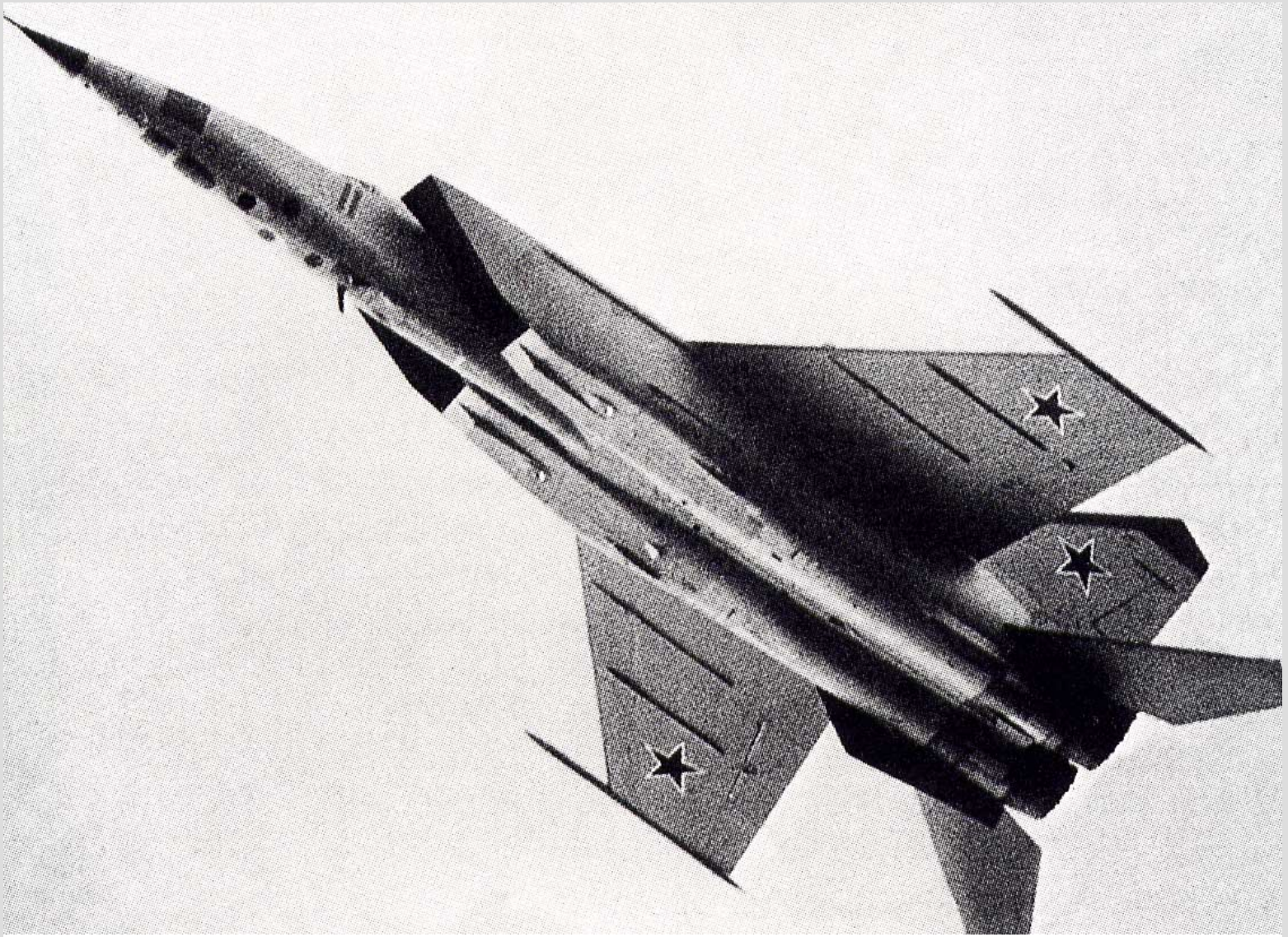
SCALED-UP DRAGON

- 1st Soviet acft dedicated entirely to reconn:
  - Yakovlev (Yak-26 'Mandrake')
  - 1st service in 1963- max. altitude of 67,255 ft.
  - Acft utilized a Yak-25 with a longer fuselage like the U-2.
  - Replaced by MiG-25R 'Foxbat'- first appeared in Egypt during 1970.
    - Top altitude MiG-25 – 87,925ft
    - 'B' Carries small SLAR – 'D' sacrifices cameras for larger SLAR. Flew unopposed over Iran.

SPIES IN THE SKIES

SCALED-UP DRAGON

- Elint (Electronic Intelligence) is specialized & very important form of Sigint.
  - Elint Acft equipped w/ highly sensitive receivers
    - Turned to frequency of radar defences of potential enemy.
  - Their task is recording & analysis of enemy signals – to find best way to 'Jam' / evade radar net.
  - Most stayed well clear of enemy borders, but occasionally will press in close to set enemy defences in motion.
  - This would provide wealth of intell on subjects like..
    - Sensitivity and range of defence network
    - Speed of reaction of its interceptors.

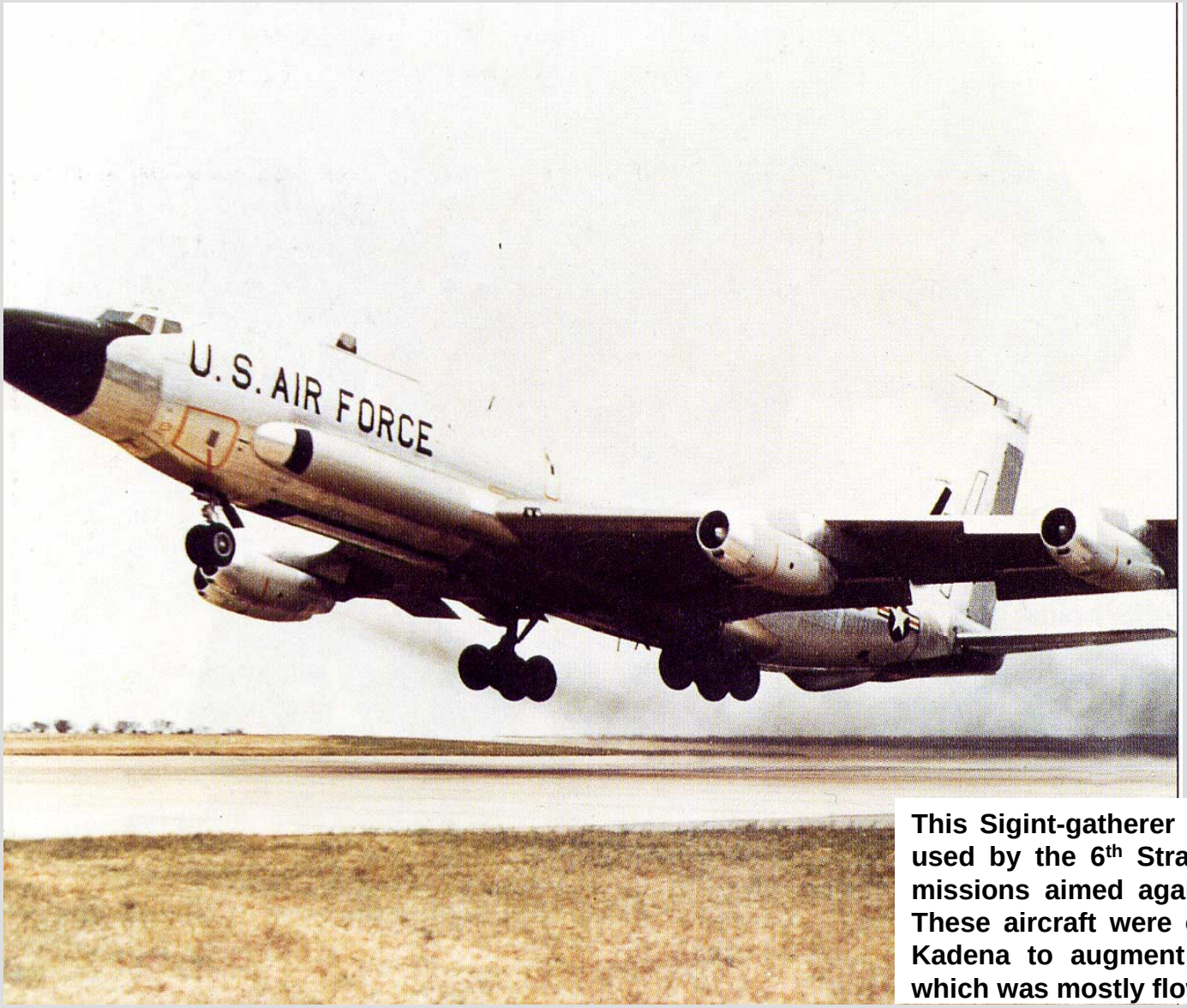


The Soviets developed the MiG-25R 'Foxbat-B' as a high- and fast-flying camera ship. Capable of Mach 3.2 for a short burst, the type flew missions over Israel from Egyptian bases. Later SLAR- and Elint-equipped versions were developed.

SPIES IN THE SKIES

ELECTRONIC C-135

- A few USAF Boeing KC-135 tankers were modied with a SLAR system in 1962.
- 1965, a custom built RC-135 version of B-707 was introduced.
- Major platform for SAC's Elint collection activities ever since.
- 11 Elint specialists were carried as well as augmented crew for longer flights.
- Height of Cold War = RC-135's operated by 55 SRW – Offutt AFB, NE (Det=Mildenhall, Kadena, Athens, Eielson AFB, Shemya.



This Sigint-gatherer is an RC-135D, originally used by the 6th Strategic Wing in Alaska on missions aimed against the Soviet Far East. These aircraft were occasionally deployed to Kadena to augment the Vietnam War effort which was mostly flown by RC-135Ms.

Elint platforms

While high-flying U-2s and SR-71s captured the public's imagination, it was the Sigint aircraft which were the intelligence workhorses of the Cold War, flying daily missions around the Soviet Union and its allies recording and analysing electronic signals. The 55th Strategic Reconnaissance Wing was the premier USAF Sigint unit, exchanging its Boeing RB-47Hs for Boeing RC-135s in the 1960s. These veterans are still very much in service today, their onboard equipment having been continuously updated in response to developments in air defence systems and communications networks.

Boeing RC-135V Rivet Joint

The large internal capacity and excellent range/load performance made the C-135 tanker/transport an obvious choice for a Sigint platform. Eight RC-135Vs and six similar RC-135Ws are currently in service, augmented by a pair of RC-135Us used for more specialist work.

The Sigint suite of the RC-135 is served by large aerials under the fuselage and by batteries of side-facing antennae arranged in cheek fairings. In addition to the flight crew, the RC-135 carries about 17 equipment operators and inflight maintenance technicians.

SPIES IN THE SKIES

NAVAL EW PLATFORMS

- US Navy shore-based Elint Duties performed by dedicated version of = Lockheed P-3 Orion.
- Carrier based acft were by=
  - Douglas Skynight
  - Lockheed Viking
- Britain replaced its electronic Comets w/: Nimrod R.Mk 1s.
  - supplanted by reconn-dedicated…
  - Handley-Page Victor
  - Avro Vulcan
- Sweden, France, Germany also used converted bombers or long-range maritime patrol aircraft.

SPIES IN THE SKIES

NAVAL EW PLATFORMS

- Soviet did not follow same trends towards utilization of transport airframes until mid-1970's.
- Elint versions of Antonov An-12 & Ilyushin IL-18 were first noted.
- They were also 10 years behind in embarking on routine long-range bombers.
  - This delays were due to deficiencies in Soviet airframes and electronics technology.
  - Soviets would also deliberately change their maps and displace cities as to try and confuse the West.

SPIES IN THE SKIES

BOMBER CONVERSIONS

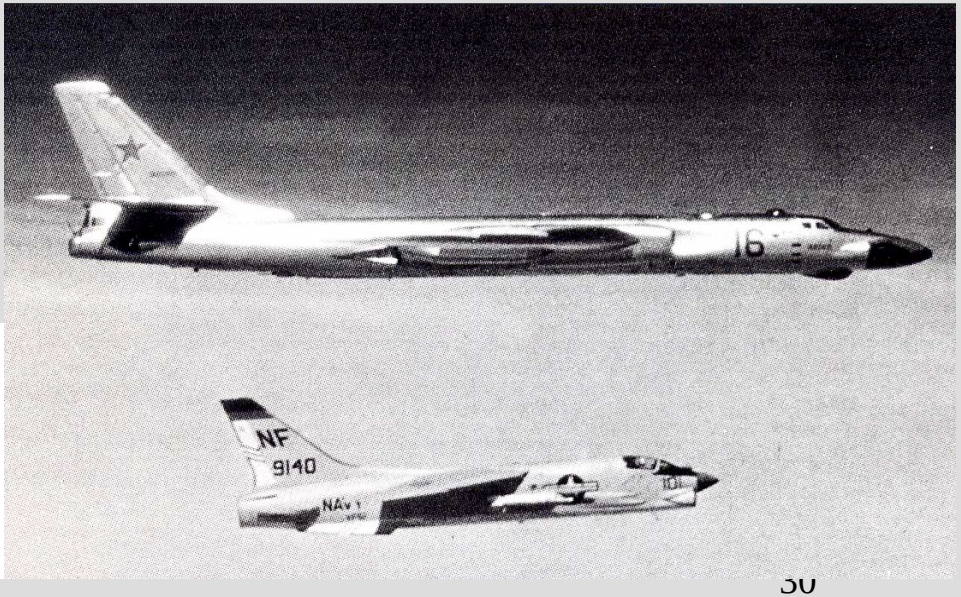
- Soviets had 3 long-range bombers (1950's) - first appearance in international airspace:
  - Myasishchev M-4
  - Tupolev Tu-16
  - Tupolev Tu-95 ('Bison'-'Bear'-'Badger')
- 'Badger-D' – enlarged nose radar / 3 additional ventral areas (began against US in Pacific)
- 'Badger-E' – large cameras in bomb bay & nose – first appearance in 1963
- 'Badger-F' – pylon mounted Elint pods under each wing.

SPIES IN THE SKIES

BOMBER CONVERSIONS

- Workhorse type was undoubtly the 'Bear'
  - First entered service in 1956, in production 35 years later.
  - Very long unrefueled radius enabled 20 hours duration.
  - Bear-E (photographic Platform)
  - Bear-D (Elint by Soviet naval air force) – 1967
    - Flown non-stop (Murmansk-Iceland/UK gap – Cuba – West Africa state of Guinea.
    - Runs: Eastern side of UK – east into Baltic's
    - Runs: Ukrainian airfields – Black Sea – Bosporus – Med patrol – to Aden or Somalia
    - Runs: Alaska to Pearl Harbor to Cam Ranh Bay, Vietnam

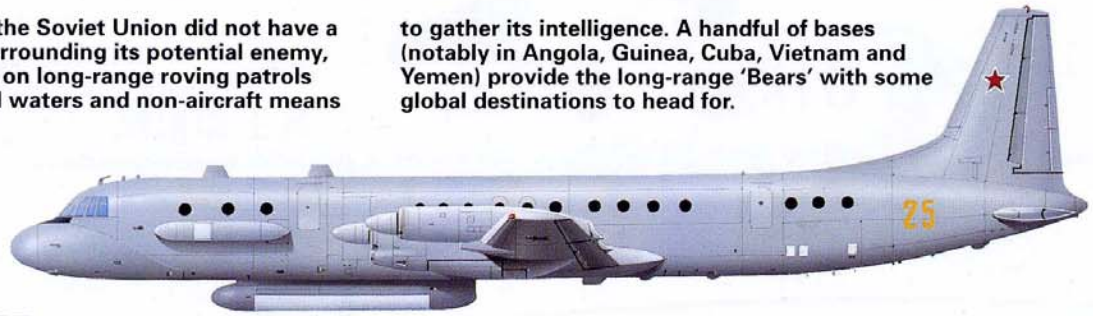
Blessed with enormous range capability, the Tupolev TU-95RT 'Bear-D' snooped around Western navies, fingerprinting the radar fits of NATO vessels. The aircraft also had an over-the-horizon missile targeting role.



TU-16 'Badgers' in various configurations were widely used on Sigint and general reconnaissance flights. But most of their attentions were for maritime targets, although they regularly probed NATO air defence systems.

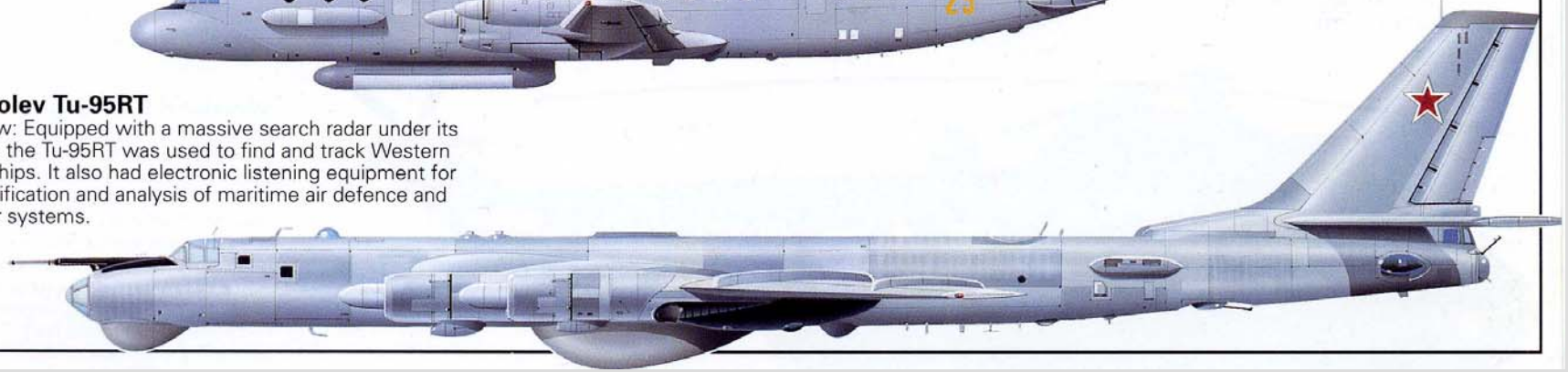
Soviet intelligence gatherers

Unlike the West, the Soviet Union did not have a string of bases surrounding its potential enemy, and relied mainly on long-range roving patrols over international waters and non-aircraft means to gather its intelligence. A handful of bases (notably in Angola, Guinea, Cuba, Vietnam and Yemen) provide the long-range 'Bears' with some global destinations to head for.



Ilyushin Il-20 'Coot'
Left: This conversion of the Il-18 airliner performed a Sigint/radar reconnaissance role. It carried a large side-looking radar under the fuselage, and optical sensors in the fuselage side fairings. An extensive Elint suite onboard allowed sophisticated radar fingerprinting.

Tupolev Tu-95RT
Below: Equipped with a massive search radar under its belly, the Tu-95RT was used to find and track Western warships. It also had electronic listening equipment for identification and analysis of maritime air defence and other systems.



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CHAPTER 12


THE COLD WAR
Anti Submarine Warfare
1970 - 1996
The Tupolev 'Bear' had phenomenal range, and was used by the Soviet navy for maritime patrols worldwide. But closer to home it was also tasked with hunting down Western hunter-killer submarines.

THE COLD WAR
13 – ANTI SUBMARINE WARFARE

MAIN TOPICS COVERED

1. SOVIET THREAT
2. ANTI-SUB HELICOPTERS
3. HIGH-TECH HUNTERS
4. DETECTION BY SOUND

ANTI-SUBMARINE WARFARE

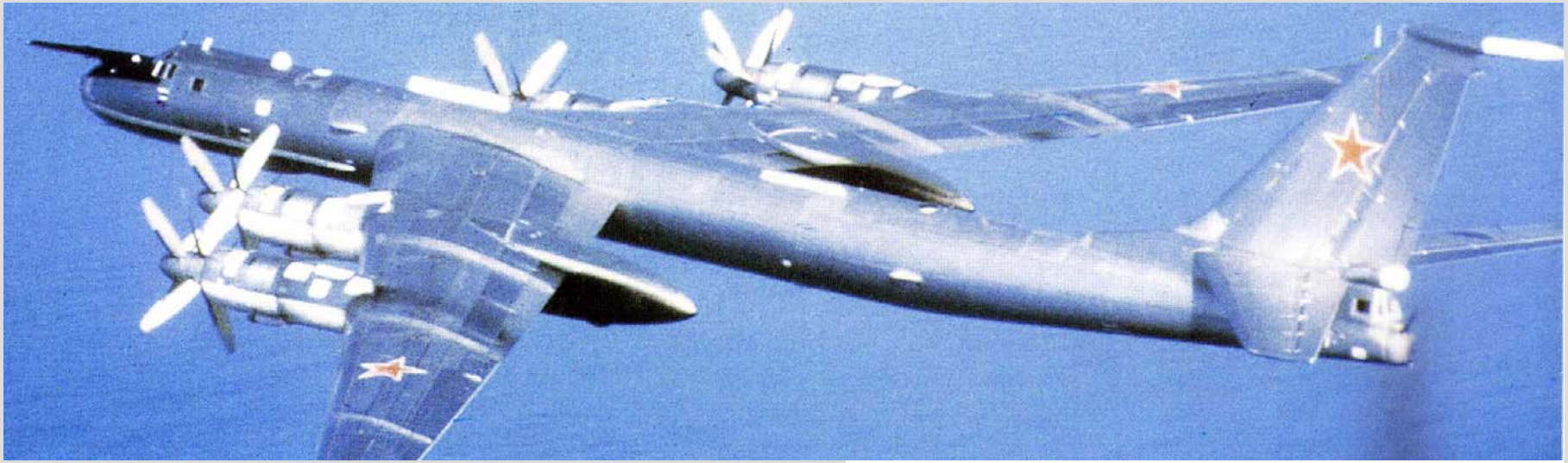
SOVIET THREAT

- Likely scenario for start of a WWIII… would have been in icy waters of North Atlantic, the Norwegian Sea, & Artic Ocean.
- Soviet naval forces to interfere with NATO's transatlantic lifeline…they had to get out into the Atlantic.
- Bases in Baltic, Black Sea, far North Soviet Union through geographic choke points.
- Primary Gap: 'GIUK Gap' = 185 mile wide Denmark Strait (between Greenland & Iceland + 500 miles (between Iceland + Faroe Islands & UK.

ANTI-SUBMARINE WARFARE

SOVIET THREAT

- Even in peacetime, GUIK Gap air-patroled constantly.
- ASW NATO crews among few personnel who carried out war roles w/ live weapons.
- Soviet threat = multi-layered:
  - Long-range Tupelov 'Bear' Bomber
  - Missile Cruisers / Destroyers on surface
  - Soviet Submarines (Major Threat)
    - Primarily noisy + short-ranged
    - by 1980s, Red Fleet had some of fastest, most sophisticated boats.



The Tupolev ‘Bear’ had phenomenal range, and was used by the Soviet Navy for maritime patrols worldwide. But closer to home it was also tasked with hunting down Western hunter-killer submarines.

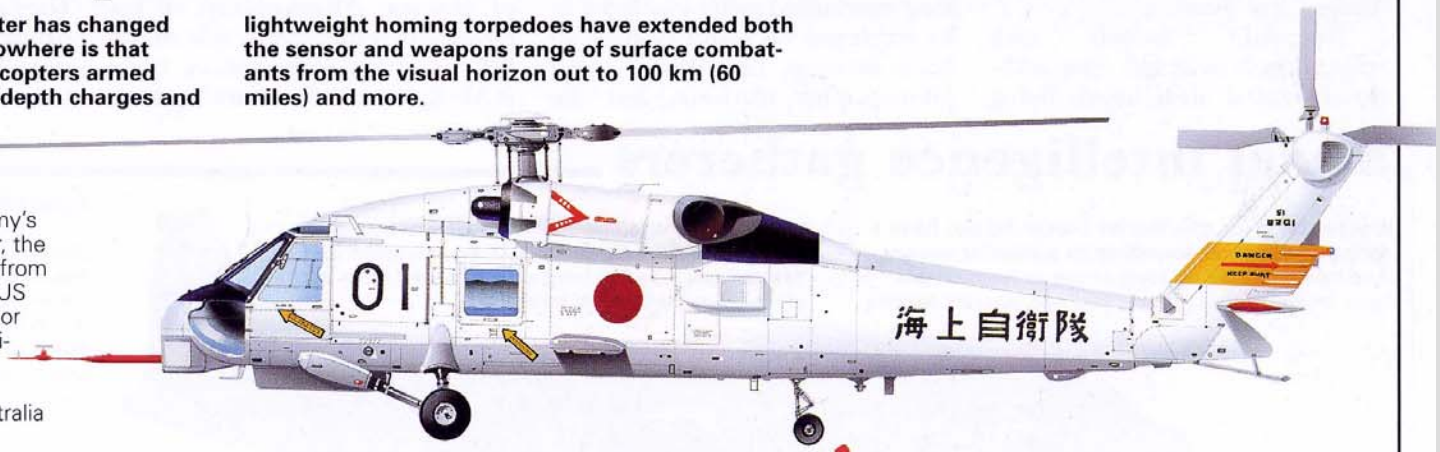
ANTI-SUBMARINE WARFARE

SOVIET THREAT

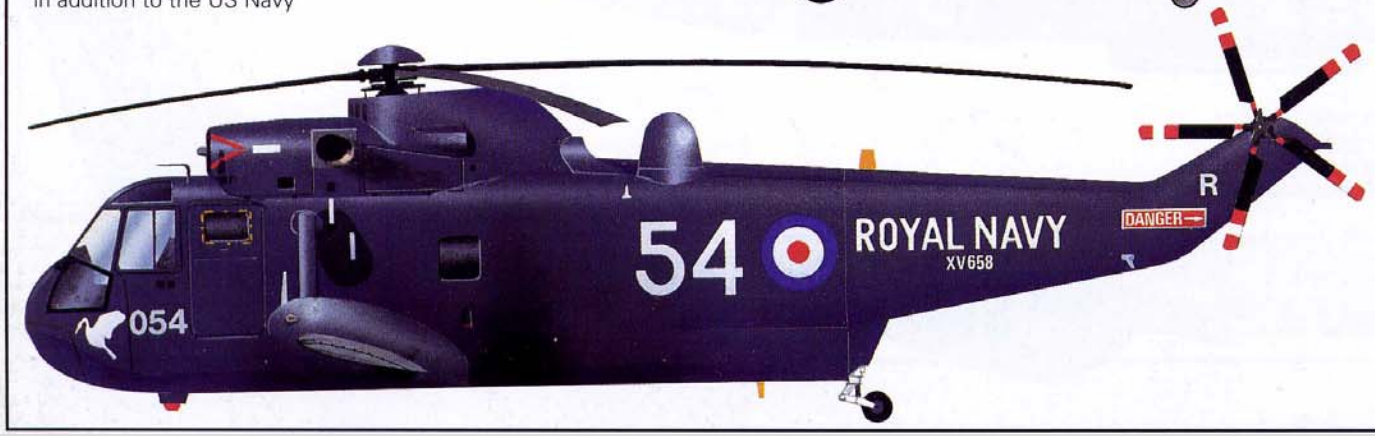
- Surfaced submarine is easy target, but once submerged… presents challenging problem.
- Under water, you must detect by and rely on sound.
- Acft flying cannot dip a hydrophone into water like ship or submarine.
- Needs a sound-sensing device --- has to rely on MAD (Magnetic Anomaly Detection) gear or radar.

Anti-sub Helicopters

The development of the helicopter has changed many aspects of warfare, and nowhere is that more true than at sea. ASW helicopters armed with dipping sonar, sonobuoys, depth charges and lightweight homing torpedoes have extended both the sensor and weapons range of surface combatants from the visual horizon out to 100 km (60 miles) and more.



Sikorsky SH-60 Sea Hawk
Right: Developed from the US Army's UH-60 Blackhawk utility helicopter, the Sea Hawk is used aboard vessels from frigate size right up to the largest US Navy supercarrier. It can be used for transport, rescue, and for light anti-shipping strikes with air-to-surface missiles as well as for ASW. It is used by Japan and Australia in addition to the US Navy



Westland Sea King
Seen here in its earlier days with the Royal Navy, the British-built variant of the long-serving Sikorsky Sea King is a sophisticated submarine hunter. It is equipped with a sea-search radar, advanced electronic systems, sonobuoys and a dipping sonar capable of being deployed more than 200 m (655 feet) beneath the surface of the ocean.

Britain's Lynx is one of the fastest and most capable light naval helicopters currently in service. It is carried by many NATO destroyers and frigates as their principal ASW weapon.

ANTI-SUBMARINE WARFARE

DETECTION BY SOUND

- Solution to sound problem = sonobuoy.
- Sonobuoy:
  - expendable acoustic systems
  - ejected from aircraft as it flies over surface
  - sends data via radio to aircraft overhead
- When Sub detected, acft uses homing torpedoes or nuclear dept charges to attack any target revealed.

ANTI-SUBMARINE WARFARE

DETECTION BY SOUND

- Orions (from Royal Norwegian AF) based at Andoya … first to react to any soviet sub movement from bases in Kola Peninsula.
- First warnings probably from SOSUS (line of underwater sensors) stretching from: Norway to Spitzbergen.
- Iceland was hinge which NATO's efforts to bottle-up Soviet fleet depended.

High-tech Hunters

The ocean is a big place, and a submerged submarine is not easy to find. Successful maritime reconnaissance and anti-submarine aircraft need to be able to cover vast distances in their patrols, combining incredibly long endurance with the ability to use very advanced sensors and avionics and to deliver a wide range of weaponry.

BAe Nimrod MR.Mk 2

Left: Based on the pioneering Comet airliner, the Nimrod entered service in 1969. Thanks to its jet engines it can make very fast transits to its assigned patrol area: once there it can shut down one or two engines and loiter at low speed for up to 12 hours.

Lockheed P-3C Orion

Right: Developed from the Lockheed Electra turboprop airliner, the Orion is the US Navy's primary land-based ASW and maritime patroller, and is used by another 14 nations including Norway. Like the Nimrod, it can shut down engines for economy, enabling the P-3 to stay in the air for more than 17 hours. The current P-3C model is packed with advanced avionics, and can carry more than nine tonnes of weapons and sensors.

Tupolev Tu-142 'Bear-F'

Below: First flown as a strategic bomber in the early 1950s, and still in production more than four decades later, the 'Bear' has been produced in many versions. The 'Bear-D' is a maritime patroller and intelligence gatherer; the similar 'Bear-F' seen here adds anti-submarine warfare capability

ANTI-SUBMARINE WARFARE

DETECTION BY SOUND

- US Navy P-3's based at Keflavik flew missions over Denmark Strait + over Iceland-Faroes gap.
- Active in peacetime as well (detachment bases in Britain and Norway).
- Britain's maritime Nimrods flew out of far south-west England.
- Scottish-based acft (NATO ASW force) assigned to closing Guik Gap.
- Nimrods would mount patrols 1,000 miles from base --- more than six hours. (Aerial refueling – up to 18 hours, except for crew fatigue).

Modern ASW aircraft like the P-3 can be datalinked to specialized ASW vessels like the FFG-7-class frigate, creating an ASW team of great efficiency. Both platforms are in service with the US, Spain, and Australia.

The Atlantique 2 is the latest variant of the Franco-German Atlantic. Currently in service with France's Aeronavale, the Atlantique 2 carries state-of-the-art avionics and ASW weapons.

END

of

CHAPTER 13

THE COLD WAR

SAC's Last Years

1970-1992

THE COLD WAR
14 – SAC'S LAST YEARS

MAIN TOPICS COVERED

1. ATTEMPTED B-52 REPLACEMENTS
2. STOP-START PROGRAM
3. HIGH-TECH FUTURE
4. THE END OF AN ERA

The evergreen Boeing B-52 has soldiered on long beyond the wildest dreams of its designers. Even though the development of advanced Soviet defences, made its survival as a penetration bomber problematical, it found a strategic role in the 1980's as a stand-off attacker with air-launched cruise missiles.

SAC'S LAST YEARS

ATTEMPTED B-52 REPLACEMENT

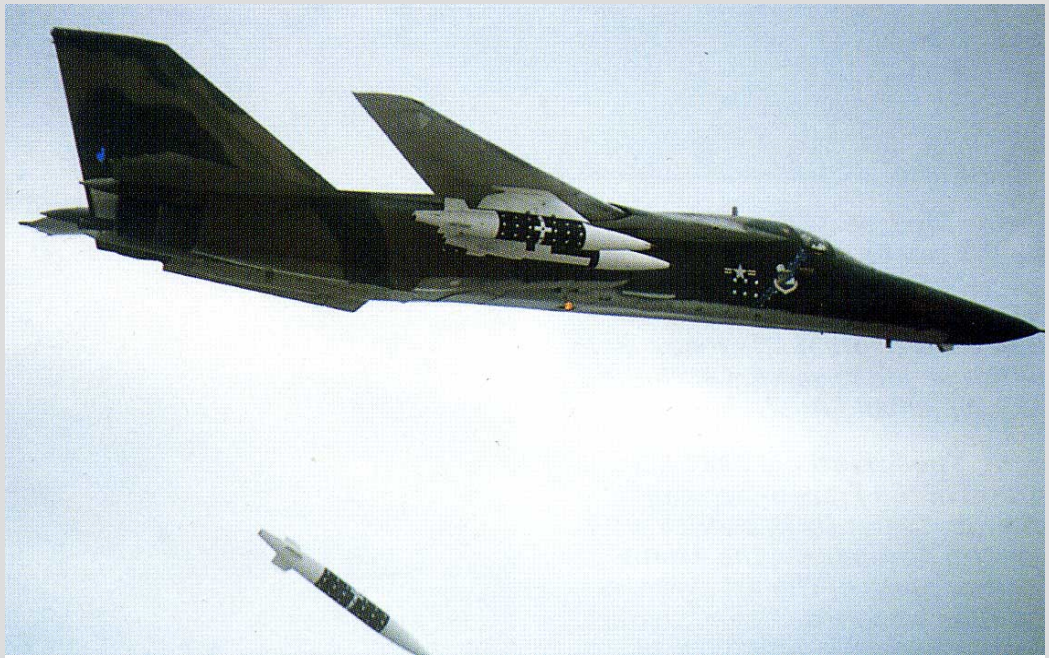
- Cold War continued relentlessly into the 1970's and 1980's.
- Planning for B-52's retirement ALWAYS planned, but never came.
- XB-70 was tried, but failed.
  - Advent of surface-to-air missile technology doomed aircraft – forced bombers from high to low altitude.
- 2nd attempt was Rockwell's B-1A (first flew at Palmdale, California – 23 December 1974.

SAC'S LAST YEARS

STOP-START PROGRAM

- 30 June 1977, Pres Jimmy Carter canceled B-1A development.
  - partially due to difficulty to replace a Heavy bomber.
  - SAC began to operate two combat wings of General Dynamics FB-111A (based by F-111A tactical units).
  - Besides cancelling the B-1A, Pres Carter also canceled the Trident Missile Sub, the MX missile, Persian II deployment in Europe, and others.
- In Oct, 1981, Pres Ronald Reagan revived plans for the B-1 rendering Carter's decision void.
- w/ USAF significant changes – 100 B-1B's were ordered. (New flight program – 23 March 1983)
  - Improved electronics, structure, & engine inlets.

The MGM-118A Peacekeeper, previously known as the MX missile, was the ultimate SAC ICBM. It carried up to 10 independently targeted maneuvering re-entry vehicles, each accurate to within 120m (130 yards) after a flight of 11000 km (6,835 miles).



The General Dynamics FB-111 was a long range version of the swing-wing tactical bomber. Armed with AGM-69 SRAM nuclear missiles, it was designed to race in ahead of the main bomber force to destroy key nodes in the Soviet air defence network.

SAC'S LAST YEARS

STOP-START PROGRAM

- In free-spending 1980s, Ronald Reagan routinely referred to Soviet Union as 'Evil Empire'- enormous amounts spent on incredibly ambitious projects.
- Many Pentagon Officers thought Nuclear War was real possibility.
- SAC couldn't be expanded… but did have cutting edge through Technology.
  - Improved ICBM (MX – Peacekeeper)
  - Strategic Defense Initiative (SDI) – 'Star Wars' missile defense.
  - Stealth fighter (F-117) secretly developed.
  - B-2 Bomber (after years of secret development).
    - Goal: Attack Soviet 'rail-way based ICBMs (very hard to track).
    - Using Nuclear and Stand-off weapons.
  - New Trident Missile Submarine w/new D-4 missiles. (10 warheads each).

SAC'S LAST YEARS

HIGH-TECH FUTURE

- … B-2 was the future of SAC.
- USAF would produce 132 / 5 Wings / 12 Squadrons.
- The 100 B-1Bs was merely an interim weapon.
- Strongest arguments for B-2:
  - Deployed in alert pattern, unlike ICBM can be recalled.
  - Unlike Sub-launched ICBM, extremely accurate w/ mobile targets. (rail)
- B-1 was publically promoted, but B-2 was secretly being developed.
  - 1st Op Sq – B-1: 96th BW, Dyess AFB, TX – 100 B-1s were manufactured.
  - B-1 was then converted to carry conventional bombs for today's missions.

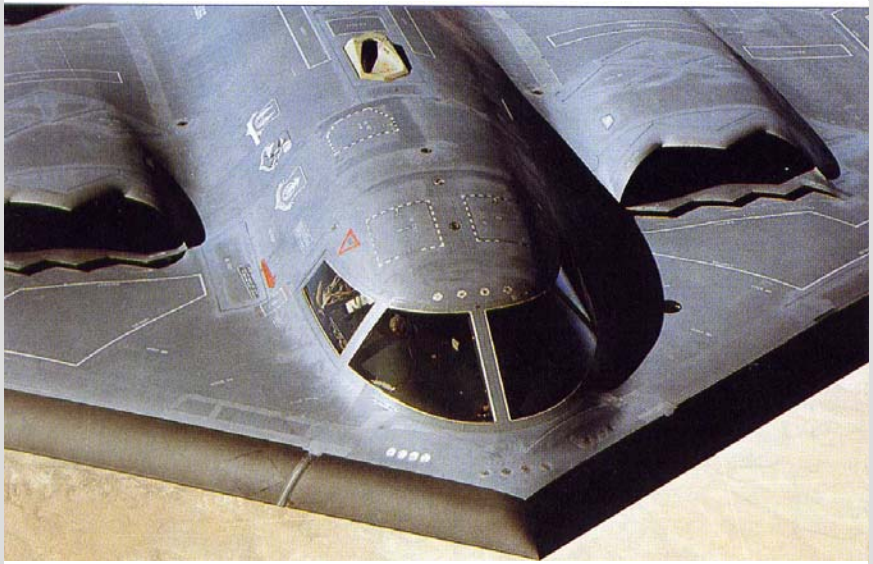
Cruise carrier

Universally known throughout the B-52 community as the 'Cadillac', the 'H' model introduced significant enhancement of the veteran bomber's load/range performance, crew comfort and weapons delivery capability. The 70 or so remaining aircraft, most being much older than the crews which fly them, are set to remain in service well into the 21st century, giving the B-52 over half a century of front line use.

Weapons fit

In the nuclear role the B-52H can carry 20 air-launched cruise missiles, eight internally and six pylon-mounted under each wing. It can also carry a heavy load of non-nuclear weapons, including conventional warhead versions of the AGM-86 air-launched cruise missile.

As newer bombers have come on line to take up the strategic mission, the 70-odd surviving B-52H aircraft have been freed for more conventional roles. These include very long-range maritime operations.



Designed for Strategic Air Command, but entering service after the reorganization of the US Air Force which saw its dissolution, The Northup B-2 ‘stealth’ bomber is the most advanced expensive warplane ever built.

An evolution of the original Mach 2 B-1A, the B-1B is a highly sophisticated low level penetrator able to carry massive weapons loads at transonic speed.

SAC'S LAST YEARS

HIGH-TECH FUTURE

- 1990's were time of global change.
- 1991 – Gulf war, B-52s bombed Saddam Hussein's Republican Guards.
  - Among were missions using C-ALCMs (Conventional warhead Air-Launched Cruise Missiles).
- With Berlin Wall being torn down, Soviet Union fragmenting, US attention shifted to trouble spots in Middle East, Somalia, Bosnia.
- The B-2 was suddenly very visible.
- It stood out like a 'sore thumb': amazing cost, now inappropriate capabilities in now unnecessary times.
- 28 Sept, 1991: Pres George Bush (41) ordered 'stand-down' of all US nuclear forces – 1st time in almost 50 years – bombers no longer waited at ready w/ Thermonuclear Weapons in their bays.

SAC'S LAST YEARS

THE END OF AN ERA

- Striving toward 40 combat wings in the 1980s, the USAF went into the 1990s expecting to operate 17 combat wings.
- The B-2 Stealth Bomber which seemed most appropriate for SAC – NEVER served in SAC at all.
- Reflecting a new world without Soviet Union, a 'hot' war of 1990s had been Operation Desert Storm – Strategic Air Command WENT OUT OF BUSINESS on 1 June 1992.
  - SAC's bombers were merged w/ stateside TAC units
  - Created the new (ACC) Air Combat Command – Langley AFB
  - Tanker units reassigned to (AMC) Air Mobility Command – Scott AFB

END

of

CHAPTER 14