CHAPTER 1

(One)
Aboard U.S.S. *William Howard Taft*
Gulf of Tonkin
14 August 1967

Lieutenant Commander Mike Duquesne took a final drag from the butt of his Salem cigarette before snuffing it out in a metal ashtray. "Any idea what this is all about?" he asked his friend, Commander Ted "Lucky" Winfield, who was seated directly across the gray metal conference table. Winfield was Commanding Officer of Attack Squadron 99, which flew the sporty little A-4 Skyhawk, a single-engine jet bomber with a phenomenal bomb load.

"Something big," the wiry Winfield replied. He'd been lightweight boxing champion of his class at the Naval Academy, and he looked it. Beneath his salt-and-pepper flattop, his face had the expression of a pit bulldog. "About an hour ago, Admiral Vann Ness heloed over from the flagship with some civilian from the Pentagon. We don't rate many visits from the task force commander."

"Maybe they're finally going to let us bomb something worthwhile," Mike continued in a soft Alabama drawl tempered by years of naval service. He respected and liked Rear Admiral "Dutch" Vann Ness, the Commander of Task Force 77, but he was beginning to doubt the sanity of the men who chose targets for the air strikes in North Vietnam. Too many good men and machines had been thrown away already on targets that seemed militarily insignificant to the American pilots. It was hard to see the logic of risking multi-million dollar aircraft and priceless pilots to bomb barracks and rural staging warehouses, especially in an antiaircraft environment that rivaled that over Nazi Germany.

Mike was Commanding Officer of Reconnaissance-Heavy Attack Squadron-17 (RVAH-17), the "Pit Vipers," a unit of supersonic RA-5C Vigilante "recce" planes. He was the youngest and most junior of the five squadron commanders assembled in the Air

Intelligence Office of the U.S.S. *William Howard Taft*, the American Navy's newest *Kitty Hawk* supercarrier. His close-cropped, curly black hair showed no touches of gray, and his craggy face was handsome in a rugged sort of way. Mike was five-feet-eleven-inches tall and weighted 185 pounds, almost all muscle. Besides Winfield, Commander Sam Baker of Fighter Squadron-295 (VF-295), Commander Lewis Frobisher of Fighter Squadron-328 (VF-328) and Commander Bill "Catfish" Robinson of Attack Squadron-401 (VA-401) were seated in grey metal chairs about the table. Their units comprised the bulk of Air Wing-88, commanded by Captain Walter Moorehouse, a Korean War fighter ace whom they called "CAG," a holdover from the days when the air complement of a carrier was known as the air group. All the aviators wore standard issue U.S. Navy zippered flight suits and had flattop haircuts.

"Attention on deck!" the Marine sentry at the doorway bellowed. The squadron commanders rose to their feet as a rear admiral escorted the man from the Pentagon into the compartment, closely followed by the commanding officer of the *Taft* and CAG Moorehouse. Carrying a bulging briefcase, the admiral's flag lieutenant brought up the rear. The senior officers' Summer White uniforms contrasted starkly with the fliers' work-a-day dress.

"Carry on," Admiral Vann Ness ordered, and everyone else settled into padded armchairs about the conference table. Vann Ness was a grizzled veteran of both World War Two and Korea with a chest full of medals to prove it. His body was whip thin, and his face appeared almost gaunt. "This won't be your usual pre-strike briefing, but unusual circumstances breed unusual events. We've got something special for you. Tomorrow morning, we're going after some targets that'll really get 'Uncle Ho's' attention."

It's about time, Admiral, thought Mike.

"This mission has the personal approval of the President. To explain the details, I'll turn you over to Doctor Jeremy Link of the Office of the Secretary of Defense."

"Actually, I work for Assistant Secretary Enthoven in the Office of Systems Analysis," the civilian said in a reedy voice as he got up and walked to the front of the room. In a room full of hard muscled warriors, Link presented a marshmallow appearance.

To Mike, Link looked like the quintessential nerd. He was short and slightly stooped,

although he couldn't have been a day over thirty. His longish, straw-colored hair fell carelessly across his forehead, and his amber eyes stared out through bottle-bottom glasses. The coat to his conservative blue business suit hung open, disclosing a plastic liner stuffed with mechanical pencils and a small slide rule in the pocket of his white shirt. Reaching into his coat, Link took out a collapsible steel pointer and extended it to full length.

"My doctorate is in operations research," Link continued. "My current employment is as an operations analyst. The air strikes that will take place tomorrow are the result of several months of intense scientific analysis of potentially crippling air operations against the North Vietnamese. Each target was carefully chosen to exact the maximum damage to their war effort in the south. We used computer simulations to select the optimum mix of aircraft and ordnance and the flight profile with the least chance of causing needless civilian deaths, what you call 'collateral casualties.' What we intend to effect is a surgically precise removal of a dozen key targets to demonstrate to the North Vietnamese leadership that if they continue to abuse our restraint, we'll be able to destroy them at will." Link walked to the side of the room and began opening the curtains that concealed the big wall maps.

Get on with it! Mike thought impatiently. *We don't need a replay of Twelve O'clock High. Just tell us the "straight skinny."*

"Tomorrow morning, we're going to paralyze the North Vietnamese railway system," Link continued. "The Air Force units from Thailand will take out the Paul Doumer Bridge in Hanoi, as well as the other rail links in Route Packs VIA and V." Link stabbed viciously at the large map of North Vietnam with his pointer. "Planes from the *Franklin D. Roosevelt* will attack Route Pack IV to drop the Ham Rong Bridge at Thanh Hoa and the Troung Quang Tien Railroad Bridge. *Oriskany's* air wing will take out the Hai Duong Bridge between Haiphong and Hanoi. You men have drawn the most politically sensitive mission of all, north of Route Pack VIB in the thirty-mile buffer zone along the Chinese border."

The bridges at Lang Son? Mike thought excitedly.

"The rail and highway bridges over the Song Cung in Lang Son," Link continued. "Lang Son has been a strategic rail and road junction since the days when the French

controlled Indochina. It was one of the key targets of the Japanese when they occupied the country in 1941 to shut off supplies moving from the port of Haiphong to China. The Northeast rail line from Hanoi connects with Nanning in the Chinese province of Kwangsi. Lang Son is also the junction of Highway 1 running north and south and Highway 4 running east and west. The Cung River rises in the mountains east of Lang Son, flowing westward for most of its length before turning north into China. Both the Northeast railroad and Highway 1 cross the river in Lang Son. Your job tomorrow is to destroy those bridges, cutting both rail and highway links with China."

"A worthwhile target, at last," growled Lucky Winfield.

"This will be a full deck Alpha strike," Link droned on. "Because of the proximity of the bridges, it will be conducted in two phases, ten minutes apart. Phase one will be the attack on the highway bridge, which is closest to the coast. It will be mounted by VA-315. VA-401 will make the follow-on strike on the railroad bridge. VF-295 will provide TARCAP, flak suppression and Iron Hand for both phases. VF-328 gets the MIGCAP assignment. Post-strike photo and electronic reconnaissance will be performed after phase two is completed by one of RVAH-17's Vigilantes.

"Now, a few words about mission profile and rules of engagement. You all must realize that this is a very politically sensitive operation. We worked our computers overtime to come up with the absolute minimum amount of flight time inside the buffer zone. After crossing the coast between Haiphong and Hon Gai at 24,000 feet, the flights will bear northwest, as if you were going for the MIG base at Kep. Bypassing the airfield, you'll make a wide 180-degree swing to the north which will leave you flying back toward the coast at 12,000 feet when you hit the roll-in point over the Cung River. The actual attacks will be made straight up the gorge, with bomb release at 4500 feet. Immediately after bottoming out, each plane will break to the right and fly south out of the buffer zone. The flights will then reform at 20,000 feet, turn east and return to the coast.

"You must pay particular attention to limiting collateral damage. We want only the bridges, not a lot of civilian casualties, especially not any Chinese or Russian casualties. We know from our intelligence that the Chinese are helping the enemy maintain and run the railroad, and we also suspect that some of the Russian technicians who've been

training the missile troops may be billeted in the buffer zone for safety. The flak-suppression aircraft will make ground strikes only if you're actually fired on, and then they must limit their action to the site from which the fire came. If hostile aircraft try to intervene, either from the NVAF fields or from China, the MIGCAP aircraft will take appropriate action to protect our forces. Under no circumstances will hostile aircraft be pursued any farther north than Lang Son itself.

"Now, the exact details of the plan are contained in the folders which Admiral Vann Ness's aide will distribute. After you've had a few minutes to study them, we'll entertain any questions you may have."

For several minutes, the officers shuffled through the folders, absorbing the information contained in the papers.

CAG Moorehouse finally broke the silence. "Admiral, I find this highly unusual. This is a detailed operations order, right down to precise tactical details. I've never heard of Washington dictating things like roll-in headings, ordnance fusing or flak suppression tactics."

"I'll agree it's out of the ordinary," Vann Ness replied.

"It's a hell of a lot more than that, Admiral," snapped Lucky Winfield, barely controlled anger evident in his voice. "It's a goddamned blueprint for disaster."

"You're overreacting, Lucky." The admiral's voice was suddenly icy and sharp. "Just cool down and finish studying the plan."

"No, wait," Link interjected. "I'd like to hear Commander Winfield's reservations."

"I assume that you're a statistical expert, Doctor Link?" Winfield continued.

"That's correct."

"Well, your computer was obviously working from the wrong models. Take the roll-in heading. You've got the approach runs laid on perpendicular to the axis of the bridges. That's the approach with the very smallest probability of scoring a hit on a bridge. Hitting a point on a line that's only about sixty feet long from 4500 feet is damn near impossible. To maximize the probability of a hit, the approach should be a few degrees off the axis of the bridge. That way, you walk your stick of bombs both across and along the span, exponentially increasing the hit probability. But that's only half the problem. You've got both the attacks and the follow-on recce coming straight up the river gorge. That's an

antiaircraft gunner's dream. Once he gets a firing setup he just sits there and pumps steel into the air. The phase one strike group might get away with it, but my boys are going to get clobbered. The guy flying Duke's Viggie will really be up shit creek."

"I'm afraid you underestimate our analysts, Commander," Link replied frostily. "The factors you've brought up were, of course, known about and considered. You simply don't understand. The absolute essentiality of avoiding any Chinese or Russian casualties overrode such considerations. The President himself confirmed that assessment."

"You're damned right, I didn't understand," Winfield shot back. "I had this crazy idea that the lives of our pilots were more important than those of the enemy."

"Sit down and shut up, Lucky," Vann Ness barked in clipped tones. Then he turned to the man from the Pentagon. "Doctor Link, I think I need a word with my officers in private."

"But..." Link started to protest.

"My aide will escort you back to my cabin. I'll be along in a few minutes."

The analyst shrugged his shoulders, gathered up his papers and rose to follow the flag lieutenant out through the door.

"Before he goes, I'd like to ask the good doctor a final question," said Captain Taylor, *Taft*'s skipper. Another Korean War fighter ace, he was nicknamed "Red Baron" because his hair had once been flaming red.

"Okay, but I hope it's a short one."

"Have any of you people in Systems Analysis ever read the *Strategic Bombing Survey*, Doctor Link?"

"I've heard of it, but, no, I've never actually read it."

"I didn't think so," the Red Baron commented. "That's all I wanted to know."

"Okay, boys, the gloves are off," Dutch Vann Ness began, "but I get my licks before the rest of you. First, I have to tell you that everything you're going to say has been said already by the CNO and Admiral Sharp in Hawaii and by COMSEVENTHFLT. The fact is, Washington is totally out of touch with what's really happening out here. The Secretary is hung up on his charts and his statistics that say we're winning the war the

way we're fighting it now. He keeps talking about surgical bombing strikes as if we could hit a pinpoint from five thousand feet, and the President's been bragging to newsmen that we aren't allowed to bomb an outhouse without his personal permission. As if that was something to be proud of."

"Admiral, I had to ask that question about the *Strategic Bombing Survey*," the Red Baron spoke up. "SECDEF and his crew brag about how scientific their management style is. Well, the *SBS* was one of the most extensive analyses ever made. The Air Force spent hundreds of man-years on it, studying the effects of aerial bombing on the Brits, Germans and Japs. One of their key conclusions was that you don't break a people's will to fight by bombing unless you do it with intensity enough to totally disrupt their civilization. All Hitler's bombs did to the Brits was make them mad enough to work harder. The same was true in Germany until almost the end. German war production continued to increase right up to their collapse. We didn't make a dent on Japanese morale until we carpet-bombed their cities with incendiaries, burning out hundreds of thousands of people. The President's tit-for-tat gradualism has held our war effort back a level that Uncle Ho's boys can cope with."

"You're preaching to the choir, Baron," said Vann Ness. "We all know the score, but nobody can get through to the clique that's running the war. Everybody seems afraid to put it straight to the President.

"Which gets us back to the mission. There's no use bellyaching about it anymore. SECDEF and the President approved that plan. What we have to figure out is how to pull it off successfully with the lowest number of casualties."

"Lucky is right about the flak gunners," said CAG Moorehouse. "The recce plane coming in last will have it the worst."

"What do you think, Mike?" the Admiral asked Duquesne.

"One thing Link didn't dictate was the speed for the post-strike run. If we do it supersonic, maybe Mach 1.3 or 1.4, we might get away with it. I plan to fly this one myself."

"Do you think that's wise?" asked the CAG.

"I'm the best qualified. The first thing we did when the Viggies came out last year was to accurately map North Vietnam. I flew the missions in the buffer zone. I know the

terrain. Besides, I have the most combat time in the aircraft. It boils down to me having the best chance of pulling it off."

"You're the squadron C.O. It's your call," the CAG agreed.

"That's about it," Mike Duquesne said in conclusion to a short pep talk to his pilots. They were in the Pit Vipers' ready room, several levels below *Taft's* flight deck. Besides himself and Lieutenant Chuck "Muscleman" Feinstein, there were four additional flight crews to serve RVAH-17s five RA-5C Vigilantes. "If everything goes okay, I'll be back aboard by mid-morning. XO has the con until then." He nodded at Lieutenant Commander Frank Marlowe, his second-in-command. Marlowe had been a close friend since their days together at the Academy, where he'd been a year behind Mike. "Have all the techs in the IOIC standing by. Admiral Vann Ness and Link will be breathing down our backs for the post-strike prints." Besides the Vigilantes, Mike's command included a suite of trailers housing the incredibly sophisticated processing and interpretation equipment of the new Integrated Operational Intelligence System.

"We'll be ready," said Marlowe. "Good luck and good hunting."

"Thanks. Come on, Muscleman," Mike said to Feinstein. "Let's go up to the roof."

"If you insist, Skipper," said the curly-haired reconnaissance-attack navigator (RAN). The son of a wealthy New York businessman, Feinstein's relaxed manner was deceiving. He was an electronics whiz with an engineering degree from the City College of New York. No one on the ship could work the "black boxes" that were crammed into every space on a Vigilante with half his proficiency. "If it were up to me, I think I'd vote to pass on this one."

"We don't get a vote. The first strike group is already in the air." Mike went through his pockets one final time to make sure that he was carrying no information that might help the enemy if he were captured. The final step of this little ritual was to take out of his left breast pocket the photograph he always carried of his wife, Betty, and their two children, Timothy and Carolyn. It was a snapshot taken in front of the Navy quarters at NAS Sanford, Florida, where the family still resided. "That's it, XO," he said handing the picture to Marlowe. "I'll pick it up when I get back."

Mike always felt like a pack mule just before a flight. Worn over his zippered flight

suit and tightly laced G-suit, his torso harness and survival vest made him top-heavy. His .38-caliber service revolver with its shoulder holster and bandoleer of half ball and half tracer ammunition added another two and a half pounds of personal firepower. He was carrying his helmet in a protective bag. His steel-toed leather boots echoed off the steel deck as he led Feinstein to the escalator that led up to the flight deck.

Forty knots of wind across the deck tore at Mike's hair as they came out onto "the roof." The sun was an orange ball just above the eastern horizon, and the heavy tropical air retained a few degrees of chill from the preceding darkness. The noise level was incredible. Two steam catapults at the bow and two more at the angled deck were just flinging the last planes of the second wave of the attack into the air. The wide surface of the flight deck was covered with a mass of machines and men going about the most dangerous jobs on earth with the aplomb of experience and hard training.

Mike turned his attention to the area just forward of *Taft's* towering island structure, where his aircraft was always parked. A smile creased his lips as he caught sight of her. From this distance, the Vigilante looked like a fighter. From her needle nose to the tip of her tall, swept-back tailfin, she had the sleekest lines of any bird on the carrier. Originally designed as a supersonic nuclear bomber, the Vigilante's role had been switched to reconnaissance when ballistic missiles took over the strategic strike function. The linear bomb bay between her engines now held huge fuel tanks and part of her intelligence payload. The RA-5C's greatest asset was her speed. Flat out, she could outrun anything in the skies over Vietnam.

The last order of business before boarding the Viggie was a quick "walk-around" with the plane captain. Mike spotted Aviation Machinist Mate First Class Jerry Walsh standing by near the right landing gear. The skinny, freckled-faced petty officer saluted Mike smartly as he neared the plane, reporting that she was ready for action.

"Very well," Mike responded, confident that Walsh and his skilled team of mechanics were as good as their word. Nevertheless, he did a quick pass around the sleek warbird, his eyes peeled for any mission-stopping defects. Muscleman went underneath the fuselage to inspect the ports for sensors. The RA-5C carried an astonishing array of reconnaissance equipment. The nose held search radar and a TV optical scanner. A number of precision cameras were housed in the long canoe fairing that ran along the

lower centerline of the plane like a keel. At the front were oblique and vertical serial frame cameras. One of three interchangeable modules could fill the center of the canoe: a pair of right and left serial frame cameras; two panoramic cameras; or two serial frame cameras with split vertical configuration. The "keel" also contained passive electronic countermeasures (PECM) equipment, a powerful side-looking radar (SLR) unit and an infrared (IR) mapping radar. When the plane returned from a mission, the recorded full-spectrum PECM, IR, SLR and optical data could be simultaneously processed and cross-referenced to produce precise, time-correlated "pictures" for the analysts in the IOIC.

The "walk-around" completed, the two fliers went up the bright yellow accommodation ladders to their cockpits. Walsh helped them buckle and tighten their lap and shoulder harnesses and the leg restraints that prevented an unwanted amputation in case of ejection. He pulled the safety pins to arm their ejection seats before dropping to the deck and carrying away the accommodation ladders.

Mike settled into his seat and ran quickly through the preflight checklist that he had taped to the leg of his flight suit. While the Vigilante's instrument panel was mind-boggling to the uninitiated, it was a comfortable home to Mike. He had more time in RA-5Cs than any pilot on Yankee Station. They were phenomenally fast, responsive birds to fly, and he loved every minute he spent in the cockpit.

"Everything set back there?" Mike asked Muscleman over the hot mike intercom.

"Ready to go, Skipper," the RAN responded. "All components of the AFCS are up and running. Mission data programming is confirmed."

"Very well," Mike answered in time-honored Navy fashion to confirm his understanding. In many respects, the RA-5C could practically fly itself. Its Advanced Flight Control System, bureaucratically known as the AN/ASB-12, included an advanced autopilot, multimode radar, a terrain avoidance computer containing data on the target area from previous missions, and closed-circuit television. A Radar Equipped Inertial Guidance System, a smaller cousin of the units that guided ballistic missiles, could hold the plane on an exact, preplanned course. A computer called a Versatile Digital Analyzer (VERDAN) processed and integrated all inputs and flashed information to the pilot on a "heads-up" Pilot's Projected Display Indicator. Altitude, speed, heading, ground map and targeting data could constantly be viewed on the PPDI's mirrored surface without looking

down at the instrument panel.

"Canopy coming down," Mike said to Muscleman as he hit the lever to close the cockpits. He checked for a positive lock and snapped his oxygen mask to his helmet. "Starting engines."

The twin General Electric J79 turbojets roared to life smoothly, barely vibrating the airframe at first. As they built up thrust, the plane began to strain against the hold-down chains. Throttling back slightly, Mike signaled the deck crew to "break down" the bird. Dauntless sailors darted beneath the wings to unhook the parking chains and remove the chocks. Following the directions of a yellow-shirted "traffic cop," Mike gently taxied the big aircraft onto the track of the starboard bow catapult.

Mike took a deep breath and exhaled slowly. A catapult launch was one of the two most dangerous evolutions of carrier aviation. Even now, a hookup man was underneath the Vigilante installing a holdback fitting and securely hooking the launch bar on the nose gear into the catapult shuttle. A purple-shirted sailor held up a board indicating to Mike that his gross takeoff weight was 78,000 pounds, close to the Viggie's limit. Then the catapult officer waved his arms horizontally, the signal to go to full "military" power. Mike opened the throttles gradually, pouring on power until the big bird was straining against the holdback fitting, vibrating like a mechanical bull. Tilting his head slightly forward against the coming force of the launch, he saluted the catapult officer to indicate that he was ready. The cat officer dipped his knees and touched the deck with his hand.

The world suddenly blurred as the steam catapult flung the Vigilante from a standstill to 160 knots in the space of a few seconds. Mike's seat seemed to slam against his rump, and the skin on his face flowed back along his skull. Then the big warbird was flying free, the 38,000 pounds of thrust from her engines vaulting her skyward. With afterburners roaring, Mike put the plane into a sixty degree climb toward 24,000 feet, where his escort of two F-8 Crusader fighters was already orbiting. As they fell into formation with the Vigilante, he throttled back to cruise at 570 knots.

The flight up the Gulf of Tonkin seemed almost peaceful. The water was copper sulfate blue, almost the exact color Mike remembered from his last Mediterranean cruise. Off to the northeast, the massive bulk of China's Hainan Island loomed on the horizon. The

Chinese had Mig bases there, and more than one American flier had already fallen victim when he strayed into their airspace. Following the cues on his PPDI, Mike was in no such danger. Its digital display told him exactly when to turn toward the Vietnamese coast.

"I've got the 'Electric Spads' on radar," Muscleman's voice overrode the buzzing in Mike's earphones.

"Right on time," he remarked. *Taft's* full complement of four EA-1F electronic countermeasures aircraft was up covering the ingress and egress points on the coast. The jet jockeys called them "Spads" because they were built on the old propeller-driven Skyraider airframe. Their scanners continuously searched the electronic spectrum for enemy radar signals. Any fire control radar within fifty miles could be pinpointed within a few seconds of coming on line, allowing the ECM operator to overlay its signal with one from his powerful jammer.

On the western horizon, the deep blue of the sea gave way to a broad band of snow-white beach. As he passed over it to fly above iridescent green rice paddies, Mike keyed his radio and said cryptically, "Viper Six, feet dry." Back on the carrier, the air controllers understood that the recce flight had crossed the coast. Mike began to gradually pour on power. The Vigilante shuddered ever so slightly as she slipped through the sound barrier. Her airspeed indicator continued to climb until it showed Mach 1.2.

Mike visualized what was happening ahead of him. The first phase attack group was now coming up on the target. The "Iron Hand" sections would be in the lead, pairs of A-4's carrying Shrike missiles that rode down enemy fire control radar beams to destroy their transmitters. The bombers flew echeloned in sections of four, spaced far enough apart to allow clear passes at the target. About now, the flak suppression F-8s would be moving up from the flanks and racing ahead, searching for the first muzzle flashes as they dropped through 10,000 feet. Instantly assessing which batteries posed the greatest threat, the Crusaders would dive toward the muzzle flashes to loose their Zuni rockets and 2000-pound bombs. They'd have a scant five minutes to clear the way before Catfish Robinson's first A-4 rolled in to sow its load of Mark-83 1000-pounders.

(Two)
Lang Son
Democratic Republic of Vietnam
14 August 1967

Major Vitaly Lizichev winced as he nicked a mosquito welt on his chin with his razor, then let out a string of expletives in Russian. He cursed the dull razor blade, the stifling climate that caused him to sweat off his shaving lather, the infernal insect that had raised the welt with its bite, the recalcitrance of his Chinese "allies" who had delayed his trip across their country and put him two weeks behind the schedule set by his superiors, the imperialist Yankees for starting this war of aggression against the brave socialist Viets, and the Frenchmen who'd built the local railroad with a narrow gauge. Most of all, he cursed the designer of the highway bridge over the Song Cung for providing insufficient clearance beneath the cross-bracing of the trusses to allow the passage of modern military equipment. If the bastard had been competent, he'd be in Hanoi by now, not stymied in this rural backwater. At least Major Yegor Shlomin, the advisor to--in fact the commander of--local antiaircraft forces had arranged for this comfortable billet in a formerly French hotel. He'd gotten a decent night's sleep on clean sheets for the first time in weeks. And a woman. Ah, what a woman. The Viet comrade was tiny and seemingly fragile, yet willing to do anything to please an ally come to help her people fight off the Yankee air pirates.

Vitaly Lizichev was a city boy, Moscow born and Moscow bred. Although he had Slavic features, his hair was dark brown, and his brown eyebrows ran together above his nose. He stood 180 centimeters barefoot, and his build was slender and wiry. Vitaly loved the conveniences of modern metropolitan society. He had become an expert missile engineer primarily to get away from the rough field conditions that line officers had to put up with. His current permanent assignment was with OKB-134, a missile design bureau in Tushino led by the brilliant engineer, Toropov. He was in the Democratic Republic of Vietnam to test a new extended range missile against the American B-52s. He would have cursed even harder had he known that the entire premise of his mission was flawed.

Some months before, the Uong Bi thermal power plant near Haiphong was devastated

by twenty-six 1000-pound bombs placed precisely on target in the dead of night. Vietnamese intelligence concluded that only the American strategic bombers could have performed such a mission. Surprised but elated that the Americans were risking their giant Stratofortresses so far north, the Soviet high command decided to use the opportunity to combat-test their new extended-range ZRK Krug antiaircraft missile. Since Lizichev was in charge of the testing program at Tushino, he was the obvious choice to command the provisional missile battery that they dispatched to Vietnam. What no one in Moscow or Hanoi realized was that the B-52s hadn't been allowed anywhere near the "iron triangle" targets of the far north. The Uong Bi raid had been executed by two A-6 Intruder all-weather bombers from the U.S.S. *Kitty Hawk*.

Lizichev's unit was completely mobile and self-contained. The missiles and guidance equipment were all mounted on tracked armored vehicles based on the AT-T heavy artillery tractor. Three twin transporter-erector-launchers called SPU Krug bore the nine-meter ramjet missiles into battle. Acquisition and fire control radars were carried on a single chassis, the very heart of the system, the SSNR Krug, a system that NATO called Pat Hand. Extended range surveillance was provided by a Long Track system mounted on its own tracked vehicle, while height finding was the job of a Thin Skin nodding "peel" unit. Twelve spare missiles were borne on Ural-375 6x6 missile resupply vehicles. Three ZSU-23-4S Shilka antiaircraft tanks mounting quad, radar-guided 23-millimeter guns provided close-in flak protection. Command radio circuits linked all the tactical vehicles.

After stopping the bleeding with direct pressure from his thumb, Vitaly finished shaving and put on his People's Army of Vietnam uniform. He had to hand it to the Chinese tailors in the border town of P'inghsiang. They'd done a first-rate job of cutting the green cotton outfit to fit his wiry frame. He wet his short brown hair and ran a brush through it. He was buckling on his Red Army belt with its holstered Makarov 9-millimeter automatic when the air raid siren sounded. Reacting instantly, he grabbed his mushroom-shaped East German steel helmet and ran out into the hall, almost colliding with Major Shlomin.

"What's happening, Yegor," Vitaly asked as they sprinted for the stairs.

"The Goddamned Yanks have come for the bridges," the advisor replied. The big Slav was overweight and already puffing heavily.

The two majors tore through the hotel lobby and went out onto the sidewalk. Moments later, Shlomin's driver pulled up in an old GAZ jeep. The officers jumped in, and he accelerated in the direction of the Song Cung.

"Can I do anything to help?" asked Vitaly.

"Would you risk having the imperialists identify your radar units this quickly?"

"Only under the most dire circumstances. But I have Shilkas. Could they be of service?"

"Our light flak is thin near the highway bridge," Shlomin responded after reflecting for a moment. "We could use a Shilka on each on the approaches."

"Consider it done." Vitaly said with finality. Hastily taking a notebook from his shirt pocket, he jotted down several notes, then ripped out the page and handed it to Shlomin. "I'm going to power up my Pat Hand but leave the radars off for now. My Long Track is disassembled. Your command center will have to establish communications and data links with my unit to feed us target information. Those are the frequencies to use. Have your driver drop me off at the warehouse where my men are working."

Damn that French engineer, Vitaly cursed again in his mind. One of his crews had toiled all night to disassemble the antenna of the Long Track early warning vehicle so that it would fit beneath the portal trusses of the French-built highway bridge. Another team had taken apart the Thin Skin height-finding antenna. With all dishes folded, the Pat Hand command unit would just barely squeeze through.

Captain Ivan Kizyun, Vitaly's second-in-command, dashed up to meet the jeep as it approached a complex of warehouses two blocks up the street from the river. "All the men are mustered and standing by, Major," the captain reported as Vitaly swung out of the jeep. "Orders?"

"Man all vehicles and start engines. Be prepared to move on a moment's notice." Vitaly went on to explain his intentions to Kizyun. Then the second-in-command went quickly up the alley between warehouses where the unit's equipment was parked beneath camouflage nets, the roar of starting diesels quickly followed his passage. Two of the quad antiaircraft tanks wheeled out of the alley and headed for the highway bridge.

Vitaly made straight for the Pat Hand command vehicle. Two radar technician lieutenants, Nicolai Repin and Leonard Chebrikov, were already in their places when their commander climbed in through the hatch and took his place at the command console. He issued a crisp string of orders, and the two technicians were soon bent over their consoles.

"Communications with antiaircraft command center established," Repin reported within a few minutes.

"Data link is up and running," Chebrikov announced a little later. "I'm bringing up Major Shlomin's Long Track feed on our repeater screen."

The cathode ray tube in front of Vitaly began to glow. Soon, he was forming a clear picture of the coming attack. There were at least two squadrons of hostile aircraft swiftly approaching from the west. Switching to the command frequency for his unit, he ordered his two Shilka commanders to take up positions with as much cover as they could find. Then Chebrikov took over the function of passing target data to the flak tanks. As Vitaly returned his attention to the radar screen, the first American aircraft began to roll in.

For the first ten minutes, Vitaly felt almost as if he were watching an electronic simulator. The American pilots came first for the railway bridge, pressing home their attacks with courage and precision. Listening alternately to the frequencies used by Shlomin's troops and his own command circuits, Vitaly formed his impressions of what was happening from the words that flowed through his earphones and the eerie green dots on his radar screen. Then, quite suddenly, the war became all too real.

"Black Bear Five calling Black Bear One," came a call from one of his Shilka commanders. "Emergency! Emergency! I just flamed one of the imperialists, and he's falling straight for your position."

"Button up," Vitaly ordered over the intercom. The driver's hatch had barely clanged shut when an enormous explosion rocked the vehicle. "All units, report," he ordered over the command circuit when the noise subsided to a steady roar. One by one, the vehicles reported no damage.

"The enemy plane fell in the warehouse between us and the river," Kizyun informed

him a few seconds later. “We’re going to have to move out of here. The building is on fire, and it’s spreading fast.”

“Very well,” Vitaly agreed, then issued orders for the column to wheel out from the alley and advance away from the river. Opening a hatch in the roof, he stood up on his seat and stuck out his head.

At first, billowing black smoke from the burning warehouse was all that he could see. Then his driver inched the big radar unit around the corner and accelerated as they fled from the fire. Buildings were ablaze all up and down the street leading to the river. Puffs of black and white smoke filled the skies over the river gorge. High above, a formation of little planes that reminded him of sparrows was rolling in to the attack. Even as he watched, one of the diving birds disintegrated into an ugly ball of orange flame as it met a 100-millimeter flak projectile head on.

Hot slivers of flak shrapnel began bouncing off the Pat Hand’s roof, and Vitaly hastily ducked back inside and slammed his hatch. Just then, the column lurched to a halt.

“There’s a tree down across the road ahead,” Kizyun dutifully reported a few minutes later.

“Then find a sergeant and move it,” Vitaly ordered impatiently.

“I think the attack’s over,” Repin said with relief in his voice. “The last attacker’s fleeing south.”

“Continue to track them,” said Vitaly.

“They’re reforming outside the buffer zone,” Repin continued. “Now they’re turning together toward the coast.”

“Stay on the line,” Vitaly responded. “We can’t afford to relax just yet. We can see about cleaning up this mess after we’re sure they’re gone for good.”

(Three)
Skies Above North Vietnam
14 August 1967

Fifty miles to the west of Lang Son, Mike Duquesne was just coming up on his roll-in point.

"Mother Hen," Mike said to the escorting fighter commander over the radio circuit, "Viper Six rolling in. Stand clear and watch my smoke." Dropping the nose of the Viggie, he poured on power until the airspeed indicator rose to Mach 1.3, then Mach 1.4.

"Geeze, Skipper, this is gonna be a real quickie," Muscleman's voice in Mike's earphones broke the tension of the moment.

"Make it good," Mike replied. "I don't want to make more than one pass."

"All systems are on line and functioning," Muscleman assured him. "Take her in."

The terrain below whipped by with dizzying speed. The air ahead was still filled with clouds of smoke, although the last strike aircraft had cleared the scene a good ten minutes before. Fires were raging all along the riverbank between the two bridges. *So much for no collateral damage*, Mike thought as he tried to pick out the targets through the covering smoke. As he came up on the rail bridge at ten thousand feet, he saw clearly that the center span was down and in the water. Encouraged, he held the Viggie's nose straight up the gorge to sight the highway span. Black mushrooms began blossoming in the sky behind the recce plane. The gunners below appeared baffled by the Viggie's blazing speed.

The highway bridge was hidden beneath a pall of smoke from fires on the northern bank. As he zipped by overhead, Mike caught a glimpse of the structure. There was no visible sign of damage, but the cameras would tell the real story.

"Time to head for home," Mike quipped to Muscleman. Banking the plane sharply to the right, he opened the throttles a little wider as they fled toward their rendezvous with the Crusaders.

(Four)
Lang Son
Democratic Republic of Vietnam
14 August 1967

Vitaly was congratulating his Shilka commanders by wireless when Repin took hold of his arm.

"Pardon me, Major," said the lieutenant, "but we have another target on the screen. I've never seen anything flying so fast."

"What's he doing?" Vitaly asked, focusing his attention on the screen, across which a

new dot was moving rapidly.

"At least Mach 1.3. What could it be, sir?"

"I'm not sure. Get me Major Shlomin on the circuit." He went back to watching the screen.

"I have Major Shlomin," said Chebrikov.

"Yegor, what the hell is this new target?" Vitaly demanded.

"It's their post-strike photo recon flight. Probably a RA5-C, the one they call the Vigilante. Better keep your equipment under cover in case we miss him. Those planes carry panoramic cameras."

Shit! thought Vitaly. "Get the bastard!" he shouted at Shlomin. "My vehicles are all over the street. The warehouses caught fire during the bombing."

"We'll do our best."

Which won't be good enough, thought Vitaly. He switched swiftly to his command circuit. "SPUs one and two, clear your vehicles," he ordered with urgency. "Face to the south and prepare to launch." He turned to Repin. "Prepare to power up the tracking radar. Standby to energize the command guidance beam. If Shlomin's guns don't get the Yank, we've got to blast him out of the sky."

"We may not have time, sir," Chebrikov put in. "The target has increased speed again."

"Kizyun, what's holding up the SPUs?" Vitaly demanded, forgetting normal radio procedure.

"They're turning now. They'll be ready to launch in four minutes."

"Too late!" said Repin. "The target will have cleared by then."

Dammit to hell! thought Vitaly, his mind seething. *The son-of-a-bitch is going to get away with a picture of my full unit. The imperialist high command will know we're here within a few hours. My mission will have failed. They'll never risk the B-52s if they know our capability*. For only a moment, despair flooded his mind and choked his throat. Then his analytical self reasserted itself. "You're right, Repin," he said calmly. "The Vigilante's too fast for a 'dog pursuit' interception. We must think of something else. Chebrikov, did both the Yankee strike groups fly the same egress pattern?"

"That's right, Major. They went south for fifty kilometers and then turned due west

for the coast."

"Get on your computer. Assume that the target will maintain current speed..."

"He's slowing, Major," Repin cut in. "He's joined up with two other targets; I'd say fighter escorts."

"Calculate their speed and altitude and give it to Chebrikov. Now, Leonard, assume that the target will fly exactly the same egress profile as the strike groups. Compute the bearing and angle above the horizon for the earliest possible intercept."

"Brilliant!" Repin let slip. "We'll 'take the shortcut and cut them off at the pass,' just like in the old Hollywood westerns."

"Elementary solid geometry," said Vitaly. "The shortest distance between two points."

"Shall I energize the radars?" asked Repin.

"Keep the tracking beam off until the final two or three minutes. Shlomin said they have ECM aircraft near the coast. If we come on line too soon, they may jam us. We'll energize the command guidance beam just before launch."

Two lights lit up on the missile console. "SPUs ready to launch," said Repin.

"I have the solution," said Chebrikov.

"Feed it to the SPUs," Vitaly commanded. "Set the command guidance antenna for the intercept track."

"Antenna coming around," said Repin.

The hum of powerful electric motors broke the silence within the armored carrier. Above its roof, a huge, horseshoe-shaped antenna support spun slowly to point toward the southwest. Between the forks of the horseshoe, the big three-meter tracking dish tilted slightly upward but remained silent. Outside the left trunnion, the one-meter command guidance dish rocked briefly up and down before locking onto Chebrikov's elevation solution.

"All systems ready," Repin reported.

"Energize command guidance," Vitaly ordered. "SPU One, salvo two missiles."

A monstrous roar reverberated through the ruined streets of Lang Son as the four solid fuel boosters strapped around the fuselage of the first giant missile ignited together, lifting it off the launcher rail atop the armored SPU transporter-erector-launcher.

Captured almost at once by the continuous wave guidance beam from Vitaly's Pat Hand, the missile climbed steadily toward the southwest. The boosters burned out and peeled away as the big ram jet sustainer motor thundered to life. Thirty seconds after the initial launch, the second Krug followed it into the sky.

"And now, we wait," reflected Vitaly.

"The Yanks are turning east, Major," said Chebrikov. "Right on cue. They've slowed a little. I calculate to Mach 1.1."

"Adjust the missile course accordingly."

A sense of unreality crept over Vitaly. He found it hard to fathom that the blips on his radar screen were real aircraft flown by flesh and blood men. They seemed more like mechanical targets at a shooting gallery, waiting to be knocked over by a well-placed shot. Inexorably, the tiny pinpoints of the two Krugs moved to head off the bigger dots of the American jets.

"Five minutes to intercept," Crebrikov's voice broke Vitaly's reverie.

"Energize the tracking beam to illuminate target," the major ordered. "Standby to shift frequencies if the enemy tries to jam."

"What about the homing radars of the Krugs?" asked Repin.

"Leave them off. I'm going to command-detonate the warheads."

(Five)
Skies Above North Vietnam
14 August 1967

"Holy shit!" swore the ECM operator in the EA-1F "Electronic Spad" orbiting the mission egress point off the North Vietnamese coast. A huge "spike" had suddenly appeared in the middle of his passive receiver screen. "New contact, Lieutenant," he said into his hot mike. "Something big just came up on the H-band. I've never seen this one before."

"What's the bearing?" asked the pilot.

"In a second." The petty officer tweaked his second screen until the new contact came up as a dot in the center of a compass rose. "Forty degrees to port, about three twenty degrees true. It has to be some sort of fire control radar."

"I'm turning. Get on the jammers."

As the nose of the Skyraider turned toward the coast and dropped, the petty officer tuned his directional jammer unit to the frequency of the phantom contact and flipped the switch to activate the powerful magnetrons in the pods beneath the aircraft's wings. Almost instantly, the "spike" moved several notches down the spectrum. "Son of a bitch!" the petty officer exclaimed, frantically retuning his jammer. As soon as it coincided with the new radar frequency, the "spike" jumped again. "We got trouble, Skipper," he said to the pilot. "This guy must have automatic frequency hopping. I can't hold him."

"Blue water in sight," Mike informed Muscleman over the intercom. Buried in his "cave" in the fuselage, the RAN had but two tiny canopy windows with limited view. His job was to concentrate on his scopes.

At just over 750 knots, the white fringe of beach moved closer to Mike's windscreen with satisfying swiftness. Above and behind the Vigilante, the two escorting Crusaders wove back and forth while keeping a sharp lookout for enemy fighters. *You can't relax*, Mike kept reminding himself. *You're not home free until you hook the deck wire*.

"Viper Six. This is Zapper One," came a call on his radio.

"Zapper One. This is Viper Six. Go ahead."

"Viper Six, I've got an H-band radar beam I can't jam on my scope. It may be illuminating you."

"Roger that, Zapper One. Thanks for the tip. Muscleman, did you copy that?"

"Roger, Skipper. Wait a second. I'm getting something on SLR. Looks like two 'bogies.' From the size, I'd say Mig-21s."

"Viper Six, break right, break right!" There was frantic urgency in the voice of the fighter escort commander. "Two 'telephone poles' closing fast from the north."

Adrenalin surging through his veins, Mike flipped the big bird onto her right wingtip and into a steep diving turn. As gravity forces crushed him into his seat, he caught a brief flash of the biggest missile he'd ever seen streaking by overhead. Then it disintegrated into a cloud of boiling black smoke. Steel rain rattled against the skin of the Vigilante, and Mike's world evaporated in a searing ball of orange flame.

"A hit!" Repin exclaimed. "We got the bastard!" He leaned over and embraced Chebrikov in a bear hug, and they slapped each other on the back.

"Yes, Nicolai, we got him," said Vitaly. A sudden flush of euphoria swept over him. The film with its images of the Krug unit would be ash by now. His mission was safe for the moment. Just as important, he had already proved that his experimental versions of the missile could knock down targets over a hundred kilometers from the launch site. Perhaps he should celebrate, get Shlomin to have the Viet woman return to his billet. But then his practicality returned. He needed to get his unit south of the river while the bridge remained intact. The Yankee air pirates would doubtless strike again when they realized that it was still standing. He keyed his radio mike. "Captain Kizyun, report to the command unit at once," he ordered.

Pain was the first reality to penetrate Mike's consciousness. His left arm felt like it had been torn from its socket; his neck, like a giant had tried to twist off his head. His whole body ached as if he'd been beaten in a street brawl. He fought hard against the pain and the fog that clouded his brain, struggling to regain control. He finally willed his eyes open.

He was swinging like a pendulum beneath the open canopy of his parachute. The explosion of the fuel in the saddle-tank must have activated his ejection seat, blowing him straight out through the Plexiglas canopy. Looking down, all he could see was blue water. *We made it to the coast*! he thought thankfully. Then, for just a moment, he panicked. Had Muscleman gotten out? Craning his sore neck from side to side, he searched the skies from north to south. He almost smiled when he picked out another open chute just up the coast and a little farther out to sea. His happiness was short-lived. As he watched Muscleman descend, he realized that they were drifting back toward the land.

Tug on the shroud lines, his brain told his hands, but his left arm refused to obey. It flopped helplessly about as he tried again and again to get some control of his descent. He could see the beach now, and there were people on it: small brown men wearing pith helmets and carrying rifles. They weren't shooting, just running along the band of white

sand to stay parallel with his drifting parachute.

Try to contact the RESCAP, his numb mind commanded. *Maybe they can hold off the Reds until the duty SAR helo gets here*. In addition to the PRC-90 survival radio in his seat pan pack, Mike always carried another one in a pocket sewn onto his left sleeve. Reaching across with his one good arm, he fumbled clumsily at the pocket flap. *What the hell's wrong with my hand*? Finally getting the transceiver out, he stared at it in befuddlement. The battery pack had come loose. Why couldn't he remember how to plug it back in?

He saw now that it was too late. He was only a hundred feet above boiling surf and dropping fast. He would have to take his chances on swimming far enough out to be rescued. Dropping the radio, he positioned his body for a water landing. He forgot to inflate his life vest.

For several moments, he thought he was going to drown. The weight of his heavy boots and survival gear dragged him completely under when he hit the water. Then the saltwater sensor on his vest activated and gas poured into the pockets, beginning to lift him to the surface. *Got to get loose*, his brain tried to tell him as his head broke water. He clawed for the Koch fittings to free his torso harness from the parachute canopy, but his fingers couldn't seem to get the job done. Salt water blinded his eyes. All he could see was the bright ball of the sun. He did not know which way the shore laid. He had to swim away, but how could he with the parachute trailing behind? Would it fill with water and drag him down? Something was dragging him now. He was being towed through the water like a hooked fish. Why couldn't he understand what was happening?

His butt bounced off the sand bottom, and then he was being pulled through the last small breakers and up onto the beach. He finally comprehended his predicament. Several NVA soldiers had waded out into the surf and grabbed the canopy of his parachute to pull him ashore. They stopped when he was ten feet from the water. Struggling to a sitting position, he wiped the water from his eyes and looked up. He was staring at a circle of needlepointed bayonets.