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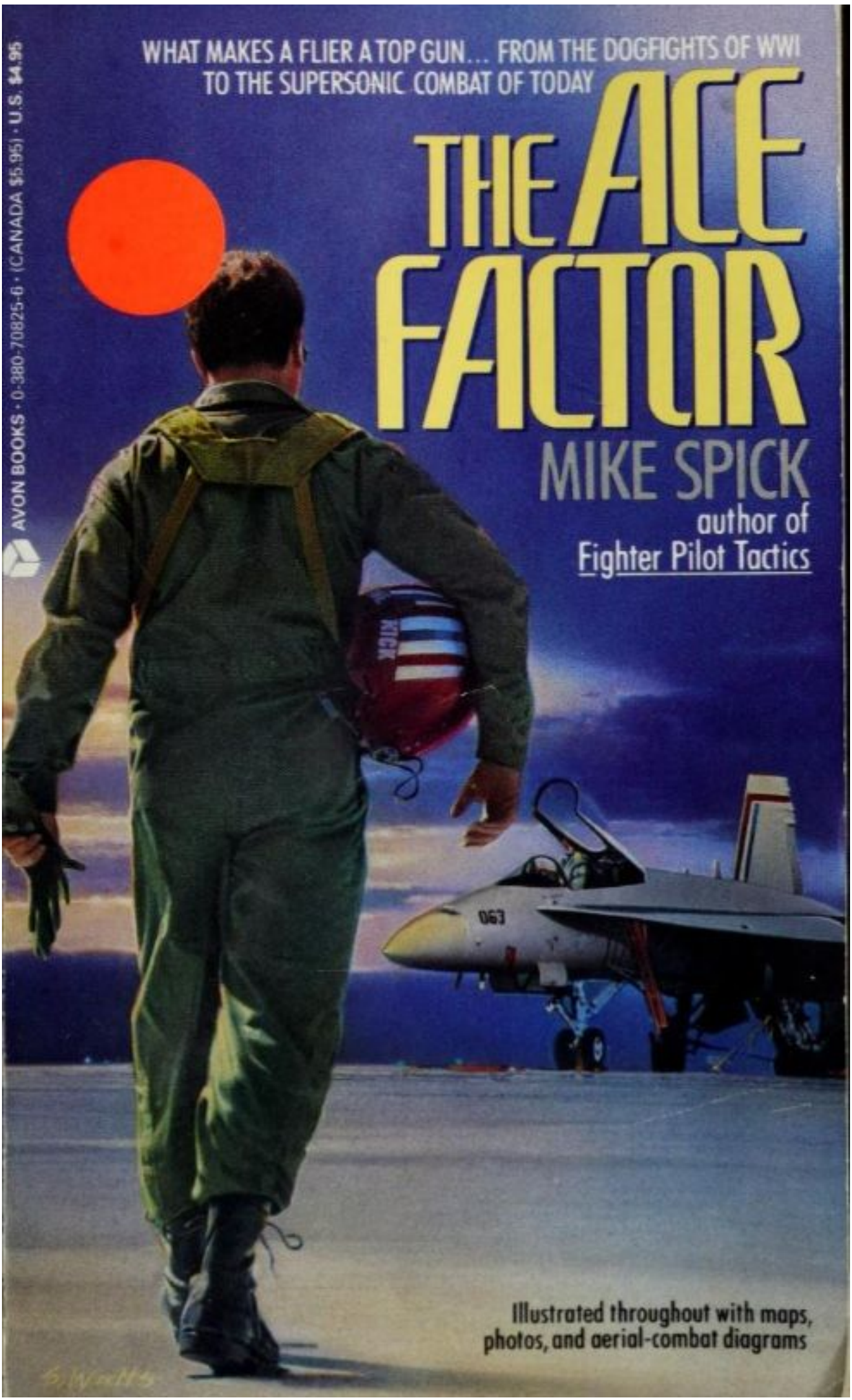
WHAT MAKES A FLIER A TOP GUN... FROM THE DOGFIGHTS OF WWI TO THE SUPERSONIC COMBAT OF TODAY

THE ACE FACTOR

MIKE SPICK

author of

Fighter Pilot Tactics



Illustrated throughout with maps, photos, and aerial-combat diagrams

ACE VERSUS ACE!

The highest-scoring German ace to survive World War I, Ernst Udets, describes his aerial meeting with Georges Guynemer, the almost supernaturally skilled French air fighter:

"At the same height, we go for each other, passing at a hair's breadth. We bank into a left turn. The other's aircraft shines brown in the sun. Sometimes we pass so closely I can clearly recognize a narrow, pale face under the leather helmet. On the leather fuselage, between the wings, there is a word in black letters. As he passes me for the fifth time, so close that the propwash shakes me back and forth, I can make it out: *"Vieux"* it says there . . . Yes, only one man flies like this on our front: that's Guynemer's sign.

"I do a half loop in order to come down on him from above. He understands at once, and also starts a loop. I try anything I can, tightest banks, turns, sideslips, but with lightning speed, he anticipates all my moves and reacts at once. Slowly I realize his superiority. His aircraft is better, he can do more than I, but I continue to fight. Once out of the turn, he can get me in his sights for a moment. Metallic hail rattles through my right wing and rings out as it hits the struts . . ."

THE ACE FACTOR

MIKE SPICK

AVON BOOKS NEW YORK

The Naval Institute Press is the book-publishing arm of the U.S. Naval Institute, a private, nonprofit professional society for members of the sea services and civilians who share an interest in naval and maritime affairs. Established in 1873 at the U.S. Naval Academy in Annapolis, Maryland, where its offices remain today, the Naval Institute has more than 100,000 members worldwide.

U.S. hardcover edition published by The Naval Institute Press, Annapolis, Maryland; original hardcover edition published in England by Airlife Publishing Ltd., 7 St. John's Hill, Shrewsbury.

AVON BOOKS
A division of
The Hearst Corporation
105 Madison Avenue
New York, New York 10016

Copyright © 1988 by Mike Spick
Pubished by arrangement with Naval Institute Press
Library of Congress Catalog Card Number: 88-61704
ISBN: 0-380-70825-6

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First Avon Books Printing: November 1989

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Printed in the U.S.A.

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Nine-tenths of tactics were certain enough to be teachable in schools; but the irrational tenth was like the kingfisher flashing across the pool, and in it lay the test of generals.

—Colonel T. E. Lawrence,
Seven Pillars of Wisdom, Book III

and fighter pilots!

—Major T. E. Lorincz, USAF.

Acknowledgments

While I am solely responsible for the opinions expressed herein, and the conclusions drawn, this book is but the tip of the iceberg. Invisible beneath it are many first hand accounts, both published and unpublished, and many learned papers which I might never have heard of, had it not been for the assistance of the following: Roy A. Grossnick of the USN Naval Aviation History and Archives, William C. Heimdahl of the USAF Office of Air Force History, Mr. Brian Cocks, Robert Shackleton Blake of McDonnell Douglas, Shlomo Kleszcelski, Colonel Reade Tilley USAF (ret), Lieutenant Colonel William D. Lafever USAF (ret), and Major Thomas E. Lorincz USAF. I am also indebted to Blake Morrison, Editor of *USAF Fighter Weapons Review,* for permission to print large extracts from *No Guts, No Glory,* by Major General Frederick C. Blesse USAF (ret), which for many years was the fighter pilot's "bible."

The transcript of the interview with Captain David McCampbell USN (ret), by Paul Stillwell, July 1987, reproduced by kind permission of the United States Naval Institute Press.

Introduction

Since the dawn of history, man has shown a propensity for armed conflict. In every age, a few men have emerged as being outstandingly good at war, and their names have been handed down to posterity. Most of them have been commanders and generals, such as Alexander the Great, Hannibal, Alfred the Great, Richard Coeur de Lion, Henry V, Bertrand du Guesclin, Gustavus Adolphus, Napoleon and Nelson. Others, and they have been fewer, for obvious reasons, have made their reputations at a lower level. Names that spring to mind are William Marshall, the medieval English champion, Yasotay, the foremost warrior of Ghengis Khan's Golden Horde who was never promoted as it might have ruined his fighting qualities, Miyamoto Musashi, the Samurai, who triumphed in over sixty individual combats, and Lifeguardsman Shaw, who cut down nine French cuirassiers at Waterloo before falling himself.

As the years passed, armies grew progressively larger and conscription became the norm. Weaponry grew ever more long-ranged and devastating, and men were herded into battle like cattle to the slaughter, with little chance to show their prowess before they were mown down at a distance too far for their executioners to even see what they looked like. This inhuman process reached its peak on the Western Front during the First World War, where huge armies, well dug in, faced each other across a few hundred yards of shell-torn ground, cowering from the monumental artillery barrages put up by both sides, with little or no chance of hitting back. When an attack was launched, the infantry were mown down by nests of concealed machine guns. Glory had a hollow ring in these surroundings of mass slaughter and mud.

High above the ruined landscape, away from the mass murder, the mud, and the reek of the battlefield, a new form of warfare had begun. Man, ever inventive, had taken to the air, and as is usual with every technical advance, had adapted it as a means of killing his fellows. In later years, air warfare was to grow hideous, striking indiscriminately at combatants and non-combatants alike, but to the infantryman at the time, up to his ankles in water, sharing his cold dugout with rats, and seeing his friends torn to pieces by high explosive shells fired with cold impartiality from many miles away, it was a new world. Fighting in the air was clean, exciting and glamorous; it smacked more of the chivalry of old; it was individual combat with man against man, machine against machine. Death, when it came, was quick and very personal, even spectacular. War pilots became the new knights, who could reckon up their individual victories, unlike the average artilleryman who, although he may easily have killed far more of the enemy, never knew it.

In many ways the wheel has turned full circle. War in the air has become more impersonal that it ever could have been in those early days. Now, over seventy years later, the fighter pilot is a highly trained technician rather than a knight, able to launch homing missiles at a target which is only seen as a tiny flicker on a radar screen. On the other hand, this is not always the case, and he must be prepared to oppose the enemy face to face and at close quarters, just as his grandfathers did in the skies above Flanders.

It is a truism of air combat that every victory demands a victim. What is truly surprising is that in every air war fought to date, a tiny minority run up a high score, primarily at the expense of the less gifted. These are the aces, about five percent of the total number of fighter pilots, who historically have accounted for roughly forty percent of the total victories claimed. By general, although not necessarily official definition, an ace is a pilot who has scored five or more victories. Many fighter pilots have scored four or five times this number: some have racked up ten times more, while the world's ranking fighter ace is Erich Hartmann of the Luftwaffe, who scored a total of 352 victories in the Second World War.

The question has often been asked: what particular quality or qualities was it that set these men apart from their peers? Was it simply the possession of a better airplane, or superior marksmanship? Were they better led, or better trained? Did they possess greater flying skills than the average, or could they have merely been luckier? The only thing that is certain is that they were very determined, and generally had excellent distance vision. Or was it that they had all of these qualities in fuller measure than the average? Let us examine all these points in turn.

A better airplane than that flown by the opponent is undoubtedly an advantage, but the record shows that there have been many instances down the years where a seemingly outclassed airplane, not necessarily even a fighter, has emerged victorious over an apparently very superior opponent. Nor is numerical superiority in the engagement a guarantee of success, although on plenty of occasions it has helped. Marksmanship is a different matter; almost all the higher scoring aces have been marksmen, although shooting ability or the lack of it has often meant the difference between a low and a high scoring ace. On the other hand, not all marksmen have become aces, usually because they didn't live long enough. In the current missile age, marksmanship has lost much of its value, although it can always be argued that shooting ability of a different nature is required.

High quality training helps to a degree, as it enables the pilot to get the utmost out of his machine and its weapons. On the other hand, the record shows that many extremely well-trained pilots do not survive their first few encounters with the enemy. Leadership seems to have a far greater effect, and it is particularly noticeable that certain units, of whatever period, have produced more than their share of high scorers. It also keeps the novice out of disadvantageous situations until he has gained experience. Superior flying skills are also an advantage, although aerobatic artists have rarely become aces and test pilots never, although not a few fighter aces have later become test pilots. Many aces have been described as only average aircraft handlers, although naturally this is a subjective judgement. This myth, for myth it surely is, probably stems from the fact that most successful fighter pilots were

men of first class judgement, which enabled them in the main to avoid situations where their superior flying skills were called for, with the result that their flying often seemed to lack *élan*. Of course, they may not have been above average flyers at the outset, but improved with practice. Another reason for this myth may be that many of the well-publicized aces of the First World War piled up their aircraft on landing. But so did everybody else, and while Fred Bloggs could do it without the fact being recorded for posterity, if the Red Baron did it, it was sure to be widely known.

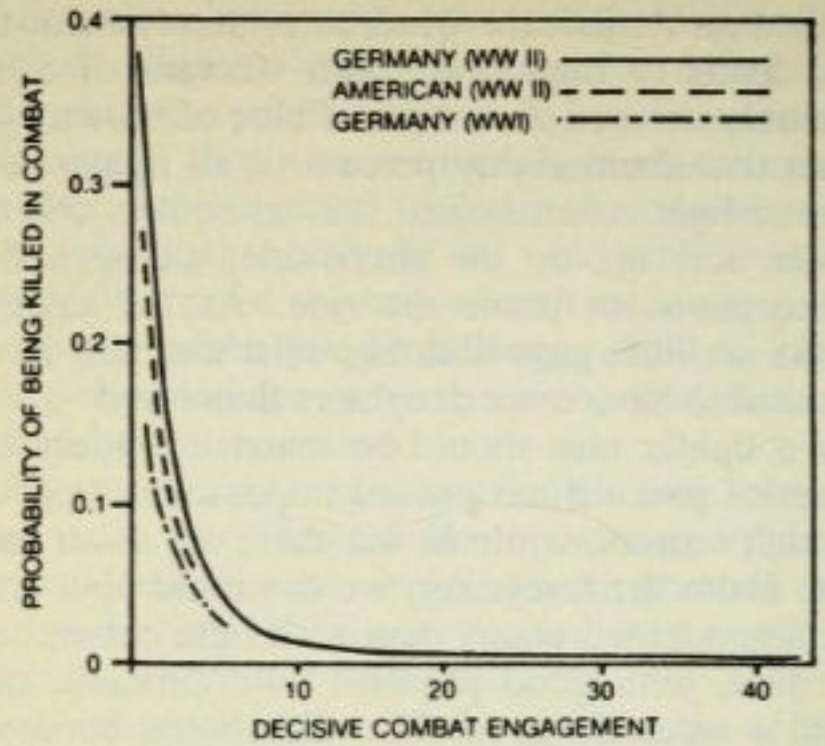
The most indefinable quality of all is luck, chance, call it what you will. Very few of the top-scoring fighter pilots of any era avoided being shot down, often more than once. Often bullets missed their bodies by inches, still more frequently their aircraft were well ventilated, but they survived. They were not immortal; quite a high percentage of them were killed in the long run, but without an element of luck at some point they would not have survived as long as they did, and their deeds would have been correspondingly less. Luck is essentially a defensive quality linked with survival, and much less a factor in the attack. Modern United States Navy fighter pilots have a saying, "I'd rather be lucky than good any day."

Determination is an essential part of the make-up of a successful fighter pilot, without which he is unable to function effectively. Many fighter aces have been described as fearless; this is simply not true. What they have to do is to control their fear, which demands a high degree of determination. Determination should not, of course, be confused with aggression: aggression is a double-headed axe, and unless it is used in a cool and calculating manner, can prove lethal to the user. The "fangs out, hair on fire" character may get results for a short while, but sooner or later inevitably gets himself into a situation from which there is no exit.

Of the physical qualities required, good distance vision and good co-ordination are essential. The ability to see small objects at a great distance is paramount, and successful fighter pilots are almost invariably long sighted. Anyone who doubts this should visit a veterans' reunion; the number of pairs of half-moon spectacles or bifocals on display is truly amazing. To digress for a moment, during the summer of 1986 the au-

thor attended an American squadron reunion where two distinguished flyers of high rank, both veterans of South-East Asia, solemnly debated the merits of blue or brown eyes. It is an odd fact that about eighty percent of all fighter aces have either blue or light colored eyes! It is an equally odd fact that most fighter aces are on the short side, although there are enough exceptions to prove the rule. As the saying goes, fighter jocks are little guys with big wrist watches! Even more odd, they tend to have more daughters than sons!

Ideally a fighter unit should be manned entirely by aces, but in times of peace it has proved impossible to pick out the potential high scorers, while in war there are never enough to go around. From the foregoing, we can build up a composite picture; a long-sighted young man with light colored eyes, on the short side, with good physical co-ordination, quick reflexes, and a naturally good shot. He should be determined and aggressive, but self-disciplined, with a flair for flying. He can then be given the best possible training and mounted in a first class fighter. The trouble is that thousands upon thousands of young men fitting this description, from many nations, have down the years, strapped a fighter onto their backs and gone forth to battle, never to return. Many of those who do return go out again and again, but achieve little. The gulf between the average fighter pilot and the successful one is very wide. In fact, it is arguable that there are almost *no* average fighter pilots; just aces and turkeys; killers and victims. American analyst Herbert K. Weiss published an article called "Systems Analysis Problems of Limited War" in 1966. He concluded that only one pilot in every fifteen has a better than even chance of surviving his first decisive combat, but having done so, after five such encounters, his survival probability had increased by a factor of *twenty.* The data used to formulate this hypothesis was limited in scope, being derived from three sources. These were the records of *Jagdgeschwader 1*, the *Escadrille Lafayette*, and the records of American flyers serving with other French units, all in World War 1; and the records of *Jagdgeschwader 26* in World War 2. While not very wide ranging, it accords very well with the statistic that only about five percent of fighter pilots become aces, and supports the unarguable fact that this tiny minority tends to



This figure, drawn from the Herbert K. Weiss study of 1966, plots the probability of being killed against the number of decisive engagements. As Weiss himself commented, "the almost vertical drop in probability in the first five decisive combats was totally unexpected." The inference is that some special quality, unrelated to flying experience, is at work.

run up large scores at the expense of the less gifted majority.

We know that it happens; but why? Some mysterious ingredient appears to exist in the few, and if this could only be identified, the whole business of selecting fighter pilots would be revolutionized. Only in the early years of the 1980s does it seem to have been identified with sufficient accuracy to be named. It is Situational Awareness; SA for short, and commonly referred to as "the Clue Bird."

SA is a combination of many things, but in essence it is the ability of the pilot to keep track of events and foresee occurrences in the fast-moving, dynamic scenario of air warfare. Major John R. Boyd, USAF, in an August 1976 briefing called "New Conception for Air to Air Combat" stated "He who can handle the quickest rate of change survives." This was one of the final clues to SA, which even yet defies pre-

cise quantification. SA has no relationship to either flying ability or experience in its purest sense, although at a practical level the right sort of experience helps. SA is the Ace Factor; this is its story, and unavoidably that of the aces themselves.

Mike Spick
July 1988