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EVOLUTION OR REVOLUTION?

**THE IMPACT OF THE 1991 GULF WAR ON
UNITED STATES AIR FORCE DOCTRINE**

**A Thesis presented in partial fulfilment of the requirements for
the degree of Master of Arts in History at Massey University**

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Abbreviations

AA	Anti-Aircraft
AAA	Anti-Aircraft Artillery
AAM	Air-to-Air Missile
AAR	Air-to-Air Refuelling
ABCCC	Airborne Command and Control Center
ACTS	Air Corps Tactical School
AEF	American Expeditionary Force
AEW	Airborne Early Warning
AFDD	Air Force Doctrine Document
AFM	Air Force Manual
ALCM	Air Launched Cruise Missile
AOR	Area of Responsibility
ATO	Air Tasking Order
ARI	Airpower Research Institute
ARM	Anti-Radiation Missile
AU	Air University
AWACS	Airborne Warning and Control System
BAI	Battlefield Air Interdiction
BDA	Battle Damage Assessment
C²	Command and Control
C²W	Command and Control Warfare
C³	Command, Control and Communications
C³I	Command, Control, Communications and Intelligence
CADRE	Center for Aerospace Doctrine, Research, and Education
CAP	Combat Air Patrol
CAS	Close Air Support
CENTAF	Air Force Component, Central Command
CENTCOM	Central Command
COG	Center of Gravity
CRAF	Civil Reserve Air Fleet
DEA	Degrade Enemy Army
DOD	Department of Defense
ECM	Electronic Counter Measure
EW	Electronic Warfare
FM	Field Manual
FSCL	Fire Support Coordination Line
GPS	Global Positioning System
HARM	High-Speed Anti-Radiation Missile
HAS	Hardened Aircraft Shelter
IADS	Integrated Air Defense System
IQAF	Iraqi Air Force
IW	Information Warfare
JFACC	Joint Force Air Component Commander
J-STARS	Joint-Surveillance Target Attack Radar System
KTO	Kuwaiti Theatre of Operations
LOC	Lines of Communication

LGB	Laser Guided Bomb
MAC	Military Airlift Command
MOOTW	Military Operations Other Than War
NATO	National Atlantic Treaty Organisation
NBC	Nuclear, Biological, Chemical
NCA	National Command Authorities
NVAF	North Vietnamese Air Force
OCA	Offensive Counter Air
OCI	Offensive Counter Information
PGM	Precision Guided Munition
RAF	Royal Air Force
RFC	Royal Flying Corps
RNAS	Royal Naval Air Service
SAC	Strategic Air Command
SAM	Surface-to-Air Missile
SEAD	Suppression of Enemy Air Defences
TAC	Tactical Air Command
TLAM	Tomahawk Land Attack Missile
UN	United Nations
USA	United States Army
USAAC	United States Army Air Corps
USAAF	United States Army Air Forces
USAF	United States Air Force
USMC	United States Marine Corps
USN	United States Navy

Introduction

One of mankind's greatest accomplishments this century has been the realisation of powered flight. Aviation has significantly changed the way that humans think, live and, for better or worse, wage war. The advent of airpower has revolutionised the conduct of warfare during the twentieth century as the development of platforms with the ability to project military power while operating above the earth's surface has opened a third dimension to armed conflict. Technological advances has made man's ascent into the air possible and it has progressively become the most important sphere of modern warfare. Airpower entails the use of the air not just as a medium for transit, as in the case of a projectile, but also for manoeuvre, deployment and surprise which includes aircraft, non-ballistic cruise missiles and more increasingly, space assets.

Constrained by geography and the physical environment to a much lesser extent than surface forces, airpower enjoys speed, reach, responsiveness and perspective far exceeding those of land or seapower. Today, aircraft are able to fly unlimited distances and deliver a variety of weapons upon targets with unprecedented destructive capacity. As well as applying direct firepower, aircraft are able to protect and enhance the combat power of all other friendly forces, regardless of their operational spheres. Indeed, the versatility, range, speed, precision and lethality of contemporary airpower have made it such an integral component of modern warfare that no major military operation can be efficiently conducted without it. In many instances, airpower has demonstrated that it can be the dominant form of military power.

This manifest itself most clearly in early 1991 during the Persian Gulf War between the United Nations and Iraq. On 17 January, an American-led United Nations Coalition initiated a campaign designed to eject Iraq's army of occupation from Kuwait, which it had subjugated over five months earlier. For the next 43 days, Operation *Desert Storm* confirmed airpower's status as the dominant force of modern warfare. Airpower was the principal military instrument used to destroy Iraq's warfighting capabilities, paralysing Saddam Hussein's ability to maintain his occupation of Kuwait. Unlike any previous large-scale conflict, an independent air campaign accounted for more than 90 percent of the war's entire duration. Only during the final moments of the war did allied ground forces undertake a major surface campaign that easily overwhelmed the Iraqis. The air campaign had already significantly degraded the combat effectiveness of Saddam's army, allowing the coalition ground forces to successfully conclude the conflict in a

matter of hours, bringing about one of the most complete military victories in the history of warfare. Airpower had proven the decisive factor in Iraq's defeat.

The purpose of this thesis is not to provide a narrative description of this remarkable conflict, but, rather, to assess the impact of the Gulf War on American airpower doctrine, specifically that of the United States Air Force, the Coalition's most powerful air component. Rather than merely presenting a chronicle of the events that occurred in the Gulf—which have been well documented, after all—this study will determine and evaluate whether or not *Desert Storm* changed or modified the prevailing basic doctrinal precepts of American airpower. It will investigate the application of airpower in the Gulf in order to establish whether the particular practices employed represented a continuation, or departure from, the major evolving trends in airpower theory and practice. The study will then reveal and explain the modifications to basic airpower doctrine, if indeed there were any. This analysis, then, is not a history of recent military aviation. Instead, it is an investigation of ideas and concepts as they have evolved and been applied to aerial warfighting.

In order to undertake this study, it is necessary first to trace the evolution of airpower theory and practice so that the doctrinal principles of the United States Air Force at the time of the Gulf War can be adequately explained. The following pages will first examine the major relevant theories and practical experiences that have driven the development of airpower doctrine from World War I, through to the early years of the nuclear-paramount Cold War. Within this period emerged the first vital lessons of airpower application and doctrinal origins that eventually formed the foundations for its future employment. The study will then examine the crucial role of the Vietnam War on the progression of American military aviation, as well as the reemphasis of conventional air warfare and growing awareness of appropriate airpower doctrine. It will then explain the actual application of airpower in the Gulf War and establish whether its employment validated current doctrinal concepts, or proved them unsound. Finally, this analysis will explain any lessons that airpower theorists and doctrine developers may have drawn from their observations of the war while determining the extent to which the conflict influenced air doctrine. It will also establish the doctrinal changes that *Desert Storm* air operations may have caused and, thus, disclose the impact of the Gulf War on American air doctrine. This thesis will provide an incisive account of why airpower played such a significant role in the Gulf while also demonstrating how that war, the culmination of eighty years of airpower evolution, highlights its crucial importance at present and for the future.