

TOPIC -

" STILL INITIAL DRAFT ONLY "

“ USE OF HORSES IN WAR ”

“

**SCIENCE, TECHNOLOGY & SOCIETY
{ “STS” }**

BY

FRANK J. GADEK, PH.D.

ADDITIONAL INFORMATION
ESPECIALLY FROM BOER WAR
& WW I IN OTHER PRESENTATIONS

**MUCH INFORMATION ON WW II
& HORSES FROM:**

“WHY THE ALLIES WON,”

RICHARD OVERY

**W.W. NORTON & CO.,
500 FIFTH AVENUE
NY,. NY 10110 [1995]**

ISBN 0-393-03925-0

**I WAS NOT AWARE & MANY OTHERS
MAY NOT BE ALSO THAT DURING WW II**

**HORSES WERE USED A LOT BY GERMANS
SINCE THEY WERE NOT VERY MECHANIZED**

**JAPANESE WERE EVEN LESS MECHANIZED –
HAD FEW TANKS !**

**POLAND USED HORSES & CALVARY
TO DEFEND THEMSELVES FROM
GERMANY MECHANIZED ATTACK –**

**FAST MOVING MECHANIZED
PANZERS, DIVE BOMBERS, BLITZKRIEG,
ETC.**

**BUT THIS IS TYPICAL OF ARMIES
OF THAT ERA SURPRISINGLY**

**GERMAN DEPENDENCY ON HORSES
MAY HAVE BEEN GOOD IN LIGHT OF
FUTURE SHORT SUPPLIES OF OIL
FOR MECHANIZED PART OF WAR MACHINE**

**HORSES COULD HANDLE ROUGHER
TERRAIN & EVEN POOR WEATHER,
ESPECIALLY COLD WEATHER IN RUSSIA**

**COULD EVEN BE EATEN IN TIMES OF
EXTREME EMERGENCY**

ME:

**RETIREMENT IS GOOD SO CAN GET TO
DO RESEARCH WHEN IT IS BEST, IN MOOD,
JUST FINISHED READING MATERIALS, ETC.**

**NOT TIED DOWN TO RIDGED SCHEDULES
LIKE WHEN WORKING**

HORSES “LOW TECH”

**BUT STILL NEED SUBSTANTIAL
SUPPORT – FOOD, WATER, CARE,
SHELTER, ETC.**

**FOR SOLDIERS, BETTER TO RIDE
HORSES OR BE PULLED BY HORSE
CARTS THAN HAVE TO MARCH
ESPECIALLY LONG DISTANCES**

**NATURALLY, MECHANIZATION COULD
BE USED IN LAND, SEA & AIR WARFARE**

**BUT HORSES WERE RESTRICTED TO
LAND OPERATIONS**

**HORSES SLOWER & LESS ENDURANCE
& CAPACITY THAN MECHANIZED
EQUIPMENT USE**

**“MY” BRIEF SUMMARY TO FOCUS ON REALITY
OF A LOT OF DATA:**

GERMANY

**HAD GREAT PR WHICH WARPED
REALITY OF SITUATION – THEY WERE NOT
AS WELL PREPARED OVERALL AS USA**

BETTER FIGHTERS – SKILL & MOTIVATION

**BUT CONCENTRATED TOO MUCH ON “PERFECTION”
& NOT MASS PRODUCTION OF SIMPLER WEAPONS**

QUALITY OVER QUANTITY

**BAD BUROCRACY [SP] & HITLER NOT MATURE ENOUGH
TO MAKE BEST DECISIONS – DEPENDED A LOT ON
EMOTION**

“OIL ISSUES” ESPECIALLY MODERN MECHANIZED WARFARE

IRONIC SINCE GERMANY PREPARED THE MOST FOR “TOTAL WAR”

BUT WHEN WAR BROKE OUT IN 1939, GERMANY WAS **NOT** COMPLETELY
A SUPER - POWER YET [P#199]

BY 1944 ONLY 1/10TH GERMAN ARMY MECHANIZED [P#218]

USA MOST HEAVILY MOTORIZED OF ALL ALLIES [P#224]

ALSO KEY WAS **PREVALENCE OF MOTORIZED VEHICLES**
IN USA – SO MANY VERY FAMILIAR WITH OPERATION &
IN BATTLE WHEN ONE BROKE DOWN, MANY WOULD KNOW
HOW TO FIX IT

PLUS – **GREAT INNOVATION** IN “ FREE “ USA VERSUS DICTATORSHIPS
OF OTHER SIDE – NEW BOOK **“ WHY NATIONS FAIL “** – SO COULD & DID
DO ON THE SPOT INNOVATIONS TO HELP WIN WAR !!!

JAPAN :

NOT WELL PREPARED & EQUIPPED

“OIL ISSUE ALSO”

GREAT ENDURANCE & MOTIVATION

**EARLY SUCCESSES LOOKED GOOD,
BUT NOT REPRESENTATIVE FOR
LONG HAUL**

USA:

INNOVATIVE

HUGH INDUSTRIAL CAPACITY

NOT SUBJECT TO ATTACK

MOTIVATED NOT DRIVEN FOR WAR EFFORT

**VERY FAMILIAR WITH MECHANICAL THINGS,
ESPECIALLY INTERNAL COMBUSTION
ENGINES – E.G. CARS, TRUCKS, ETC.**

VERY INDEPENDENT & ISOLATED & SELF SUFFICIENT

BRITAIN

WORN DOWN BY WW I & WW II
BOMBARDMENT

NAVAL POWER, NOT LAND POWER

BUT COULD NOT AFFORD NAVY NEEDED

ISOLATED

DEPENDENT ON TRADE FOR GOODS TO
SURVIVE

ITALY:

VERY LIMITED IN MANY WAYS

**NEGATIVE EFFECT OF POOR LEADERSHIP
LIKE MUSSOLINI**

DEPENDDED A LOT ON GERMANY FOR A LOT

**GERMANY, JAPAN & ITALY NEEDED QUICK
SUBSTANTIAL VICTORIES TO SUCCEED
IN LONG TERM
CIVILIANS SUFFERED A GREAT DEAL**

**USA COULD ENDURE FOR LONG TERM AS IT
CONTINUALLY BUILT UP ITS WAR
CAPABILITY
CIVILIANS DID FINE & FEW HARSHIPS,
ACTUALLY PROSPERED IN WAR
ECONOMY**

**USA IN 2 YEARS MOST MODERN ARMY IN WORLD
[P#XXX]**

**AS WAR DRAGGED ON, USA GOT STRONGER & BETTER &
COULD TAKE THE OFFENSIVE MORE
AXIS POWERS GOT WEAKER & LESS EFFECTIVE
& HAD TO REVERT TO DEFENSIVE NOT OFFENSIVE**

HORSES IN DETAIL:

1944 USA & BRITISH FULLY MOTORISED

GERMAN ARMY STILL USING 1.25 MILLION HORSES

**HITLER'S MASSIVE INVASION FORCE OF SOVIETS JUNE 1941
DEPLOYED 3350 TANKS & 650,000 HORSES! [P#5]**

**HORSES HAD TO ARRIVE WITH LORRIES FOR MAXIMUM
USE – BUT DID NOT ALWAYS OCCUR [P#164]
ME – DIFFERENT ISSUES OF TRANSPORTING LIVING
& NON-LIVING THINGS**

HITLER HAD 2 ARMIES:

SMALL MODERN – MECHANIZED

LARGE OLD FASHION – HORSES & RAILROADS

**FOR SOVIET INVASION –
600,000 VEHICLES
700,000 HORSES [P#215]**

DURING SOVIET INVASION:

**HORSES PULLED TANKS & GUNS WHEN
ENGINES FAILED**

**HORSES DRAGGED COVERED WAGONS OF
SUPPLIES & AMMUNITION**

**LARGE EUROPEAN HORSES SUFFERED FROM
FROSTBITE & MALNUTRITION**

**IN FIRST MONTHS OF CAMPAIGN, ¼ MILLION
HORSE CASUALTIES**

**SMALLER RUSSIAN “PANJE” HORSE & SLED BECAME
PRIMARY FORM OF TRANSPORT FOR MUCH
OF GERMAN ARMY [P#216]**

DURING 1942

ANOTHER 400,000 HORSES BROUGHT TO RUSSIA
FROM GERMAN DOMINATED EUROPE

GERMAN INDUSTRY ONLY PRODUCED 59,000 TRUCKS
FOR ARMY OF 3 MILLION MEN

[P#216]

GREAT RELIANCE ON HORSES NOT ONLY DUE TO CLIMATE
& TERAIN BUT ALSO SERVICING & REPAIRING
LARGE NUMBERS OF DIFFERENT TYPES OF
VEHICLES

2000 DIFFERENT TYPES OF VEHICLES FOR
INVASION OF RUSSIA

USA CONCENTRATED ON ONLY A FEW TYPES TO SIMPLIFY
THIS ISSUE

SO GERMAN HAD TO RELY MORE ON HORSE DRAWN
ARTILLERY & LONG MARCHING ON FOOT [P#217]

WHEN SOVIETS COUNTER ATTACKED AFTER
STALINGRAD

SNOW COVERED GRASSLAND WAS COVERED WITH
GROTESQUELY FROZEN CORPSES OF MORE
THAN 10,000 HORSES – SOME LIKE STATUES
HARDENED WHERE THEY STOOD [P#80]

SOME REMAINING GERMAN SOLDIERS GNAWED
FROZEN BONES OF ONE LAST HORSE
WHILE WAITED TO BE TAKEN TO PRISON
CAMP [P#84]

MOST OF ITALY'S 75 DIVISIONS WERE HORSE DRAWN

AUGUST 1942 ITALIAN CALVARY SQUADRONS MADE
THEIR LAST CALVARY CHARGE WITH SABRES
DRAWN AGAINST A SOVIET INFANTRY DIVISION
[P#221]

JAPAN REMAINED AN INFANTRY ARMY RELIANT LARGELY ON HORSES

ARMY DIVISIONS HAD AN AVERAGE OF 3000 HORSES
& FEWER THAN 300 VEHICLES

TANKS FEW IN NUMBER & VERY INFERIOR & PLAYED
VERY SMALL PART IN WAR

TRUCKS IMPORTED USA MODELS!!!

1 TRUCK FOR 49 SOLDIERS

USA 1 TRUCK FOR 13 SOLDIERS [P#221]

IN NORMANDY INVASION

GERMANS RELIED ON 67,000 HORSES FOR MOBILITY

ONLY 14,500 TRUCKS FOR WHOLE FRONT

HALF HORSES & MOST TRUCKS LOST

ONLY 100 OF 2300 TANKS SURVIVED

**NORMANDY DESTROYED WHAT WAS LEFT OF GERMAN
MECHANISED ARMY AFTER MAULING ON
EASTERN FRONT WITH SOVIETS [P#227]**

HORSES IN DEMAND FOR CIVILIAN USE DUE TO
GREAT DEMAND & SHORTAGES OF OIL
FOR WAR EFFORT [P#231]

QUOTE FROM ONE GERMAN SOLDIER –
EACH DAY WE DEFEATED THEM
BUT THE NEXT DAY THEY CAME AGAIN
& WE DEFEATED THEM
BUT FINALLY WE COULD NOT DEFEAT THEM AGAIN
SO WE HAD TO RETREAT !

**MANY ON THE SPOT INNOVATIONS BY ALLIES
TOOK THE ADVANTAGE FROM THE GERMANS**

MANY DETAILED STORIES IN THESE BOOKS !

DEMOCRACY ENHANCES INNOVATION

DICTATORSHIPS DO NOT

IN LONG RUN DEMOCRACY PROVIDES INCENTIVES
& WINS IN END

DICTATORSHIPS THE OPPOSITE

BOOK **“ WHY NATIONS FAIL “** PROVIDES MANY
VERY VIVID EXAMPLES OVER CENTURIES !

CHINA IS ON THE COURSE NATURALLY FOR DECLINE NOTE !

IN RUSSIA

HORSES & TRACTORS TAKEN FOR ARMY

PLOUGHS PULLED BY OXEN & IN EXTREME
TEAMS OF WOMEN & YOUTHS

[P#188]

**TRANSITION TO OTHER MORE
SPECIFIC DETAILS OF
WINNING OF WW II
IN THIS BOOK**

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BOOK IS DIVIDED INTO CHAPTERS COVERING
BASIC ASPECTS OF WW II

PREFACE & AUTHOR'S NOTES

CHAPTER 1 – UNPREDICTABLE / EXPLAINING

CHAPTER 2 – SEA

CHAPTER 3 – LAND

CHAPTER 4 AIR

CHAPTER 5 – NORMANDY INVASION / “D-DAY”

CHAPTER 6 – WAR OF ENGINES – TECHNOLOGY
/ POWER

CHAPTER 7 – MASS PRODUCTION

CHAPTER 8 – ALLIED UNITY

CHAPTER 9 – MORAL CONTEST

CHAPTER 10 – WHY ALLIES WON – SUMMARY

EPILOGUE – GOOD OVERALL SUMMARY

APPENDIX, NOTES, SELECTED READING,
INDEX

ILLUSTRATIONS

MAPS

PUBLISHED 1995

50 YEARS FROM END OF WW II

LONG LENGTH OF TIME GIVES
OVERALL BETTER PERSPECTIVE
& CONTEXT

MANY BOOKS PUBLISHED ON WW II AROUND
1995 COMMEMORATION OF END
OF WW II

BUT RICHARD OVERY ESPECIALLY VERY WELL
QUALIFIED & INCITEFUL

HIS CREDENTIALS – WROTE MANY AUTHORITATIVE
BOOKS ON THIS ERA

HIS STATISTICS ARE VERY CONVINCING, AS WELL
AS HIS ANALYSIS & INTERPRETATION OF THEM

WHY ALLIES WON, A VERY OBVIOUS QUESTION

ANSWERS NOT SO OBVIOUS & SIMPLE

MANY COMPLEX & RELATED STS ISSUES INVOLVED

VICTORY WAS NOT OBVIOUS IN MIDDLE YEARS OF
WAR – “KNIFE EDGE” – COULD HAVE GONE
EITHER WAY – MANY BATTLES VERY
CLOSE

ALLIES WON **ON THEIR STRENGTHS**, **NOT** WEAKNESSES
OF AXIS POWERS

ALLIES HAD INGENUITY & GREAT FAMILIARITY WITH
TECHNOLOGY [E.G., “CAR CULTURE” &
THUS MORE AMENABLE TO MOBILE,
MECHANIZED WAR]

LOT OF **JUST PLAIN “LUCK”** INVOLVED ON ALL SIDES

MANY ON BOTH SIDES REGRETTED GOING INTO
THE WAR

MANY FELT IT HAD TO BE WON

WORLD DISSOLVED IN FLAMES

55 MILLION PEOPLE DIED

DESTRUCTION SCALE UNIMAGINABLE 50 YEARS LATER

BUT NEW POLITICAL & ECONOMIC ORDER FORGED

THREATS TO PEACE MUCH LESS TODAY THAN THEN

BUT IT IS A NUCLEAR WORLD NOW - "WORLD" CAN BE DESTROYED !

PURPOSE OF BOOK IS SPIRIT OF GENUINE INQUIRY FOR
MORE PRECISION TO BENEFIT THE FUTURE [P#24]

A FEW EXAMPLES OF AMERICAN INGENUITY:

WELDED 8 STEEL TEETH 2 FEET ABOVE GROUND
ON SHERMAN TANKS - COULD CUT THRU
ROOTS OF HEDGEROWS OF FRENCH
FARMS ["BOCAGE"] WITH LITTLE
LOSS OF SPEED OF 10-15 MPH
SO COULD BE MORE MOBILE & NOT HAVE
TO JUST FOLLOW ROADS OR FIGHT FOR
EACH HEDGEROW – CALLED "RHINOCEROS
TANK" [P#171]

“BOCAGE” = FARMING COUNTRY IN FRANCE

NARROW ROADS

HIGH BANKS TOPPED WITH THICK
HEDGROWS

IDEAL FOR DEFENSIVE WARFARE
COULD BE WEAKLY HELD BUT
DIFFICULT TO PENETRATE

[P#164]

USE SUPPLEMENTARY DISPOSABLE FUEL TANKS
ON FIGHTER PLANES SO COULD ESCORT
& PROTECT BOMBERS LONGER ON THEIR
BOMBING RUNS TO GERMANY & BACK –
VERY SIMPLE BUT MANY FACTORS PREVENTED
EARLIER USE [P#123]

REPAIR OF CORAL SEA BATTLE DAMAGED YORKTOWN
AIR CRAFT CARRIER IN RECORD TIME BY 1400 MEN – 2
DAYS NOT 3 MONTHS SO READY FOR
MIDWAY BATTLE [P#39]

HOWEVER, AXIES POWERS ALSO HAD THEIR
ADVANTAGES [E.G., JAPAN'S FAR
BETTER TORPEDOES - LIQUID OXYGEN,
GERMANS USE OF FAST MECHANIZED
WARFARE – “ BLITZGREG “ – E.G., POLAND, ETC. –
BUT VERY LIMITED TO MOSTLY HORSES !]

SO VERY COMPLEX

NO ONE FACTOR OR GROUPS OF FACTORS
OVERALL WERE DECISIVE

AS EISENHOWER SAID, “WAR IS WINNING BATTLES!”
BUT HOW, WHEN, WHERE, ETC.

WW II SHOWS WHAT A DETERMINED ENEMY COULD
DO EVEN IF SERIOUS FLAWS IN THEIR
SYSTEM OF OPERATION

IT TOOK MASSIVE EFFORTS OF ALLIES TO EVENTUALLY
BEAT AXIS POWERS WITH MANY ASPECTS THAT
COULD HAVE EASILY GONE EITHER WAY

AXIS POWERS FOUGHT IN MANY CASES TO THE VERY
DEATH, RATHER THAN SURRENDER

WHAT WOULD HAVE BEEN NECESSARY & COULD IT EVEN HAVE
BEEN REALISTICALLY ACHIEVED TO DEFEAT
A STRONGER & LESS FLAWED ENEMY?

OF COURSE, TO MORE COMPLETELY
& DEEPLY UNDERSTAND MANY CRITICAL
ASPECTS, NEED TO READ THE BOOK
VERY CAREFULLY & INTENSELY

SO IN THIS PRESENTATION GREATLY
SIMPLIFY THESE ASPECTS

AUTHOR PROVIDES MANY SURPRISING
& NEW ASPECTS & CONCLUSIONS BASED
ON HIS VERY DETAILED RESEARCH &
ANALYSIS OF FACTS

SOME MAIN ASPECTS:

SEA

MINIMIZING EFFECT OF GERMAN SUBS ON
CONVOYS OF SUPPLIES FROM USA TO BRITAIN &
THEN TO EUROPE – VERY CRITICAL

LAND

RUSSIAN, EASTERN FRONT, CRITICAL
IN WEAKENING GERMAN ARMY AT TREMENDOUS
COST TO RUSSIANS & GERMANS

AIR

AIR WARFARE DEFEATED GERMAN AIRFORCE –
BY AIR COMBAT & BOMBING INDUSTRIAL SUPPLIER
-THIS ALLOWED AIR SUPERIORITY TO SUPPORT
-LAND & SEA BATTLES

USA CONCENTRATED ON MASS PRODUCING
GREAT QUANTITIES OF SIMPLE BUT EFFECTIVE
WEAPONS OF ALL TYPES – HAD GIANT MANUFACTURING
FACILITIES CONVERTED TO WAR EFFORT & GREAT DEAL
OF RESOURCES FOR INDUSTRY

USA ALLOWED INDUSTRY TO RUN PRODUCTION & CIVILIAN
SOLDIERS TO ADMINISTER & MANAGE WAR

USA WENT FROM MINOR WAR POWER TO TOP WAR POWER
IN ONLY 2 YEARS

GERMANY OBSESSED WITH LATEST TECHNOLOGY
BUT IN SMALL QUANTITIES

GERMANY PREPARED THE MOST FOR WAR, BUT EXTENSIVE
BUROCRACY GREATLY INHIBITED PROGRESS

HITLER RAN MUCH OF WAR & HE WAS INEXPERIENCED
& DYSFUNCTIONAL

AXIS POWERS HAD INITIAL VERY DRAMATIC
SUCSESSES & DID NOT CHANGE STRATEGY
& TACTICS

GERMANS VERY SKILLED AT WAR – BEST OF ALL ?

ALLIES CONTINUED TO CHANGE STRATEGY
& TACTICS AS THEY LEARNED BETTER HOW
TO FIGHT A WAR

ALLIES MORE COMMITTED IN “WILL TO WIN” SINCE
WERE ON THE DEFENSIVE OF THEIR COUNTRIES,
BELIEFS & VALUES

AXIS LESS COMMITTED & INFORMED AS TO REASONS
FOR WAR

USA

NOT ATTACKED ON MAINLAND

SO INDUSTRY COULD MAXIMIZE
PRODUCTION

NOT TERRIFIED OF GOVERNMENT

FREE TO TAKE ADVANTAGE OF
PROSPERITY OF WAR EFFORT
E.G., LITTLE RATIONING &
SACRIFICE

GERMANY & JAPAN

MAINLAND ATTACKED A GREAT DEAL

DISRUPTED PRODUCTION

GOVERNMENT VERY CONTROLLING
& USED FEAT TO ATTEMPT
TO MOTIVATE

HAD TO CONTINUE EVER INCREASING
SACRIFICE & SUFFERING
FOR WAR EFFORT

ITALY – MAINLY MINOR ROLE OVERALL

FRANCE RELATIVELY EASILY RUN OVER
BY GERMANY – AS MIGHT HAVE BEEN
ANTICIPATED, LIKE OTHER EUROPEAN
COUNTRIES – POLAND, BELGIUM, HOLLAND,
ETC.

BRITAIN – **SPECIAL CASE** – AN ISOLATED ISLAND
ORIGINAL SUPERPOWER BUT BECAME
OVER EXTENDED, BANKRUPTED BY WARS
IN MANY WAYS
USA ESSENTIAL FOR SURVIVAL

GENERAL SUMMARY:

NO ONE DOUBTS WAR HITLER'S RESPONSIBILITY

HE MADE MISTAKES ON GRAND SCALE [P#315]

BUT WHOLE IMPERIAL ENTERPRISE NOT NECESSARILY
FLAWED FROM START

FIGHTING ON 2 FRONTS IS NOT NECESSARILY LINKED
TO DEFEAT – USA FOUGHT JAPAN & GERMANY
ON 2 SIDES OF EARTH!

ECONOMIC SIZE DOES NOT EXPLAIN OUTCOMES OF
WARS – GERMANY HAD GREATER INDUSTRIAL
CAPACITY IN 1940 THAN BRITAIN

GENERAL EISENHOWER – CAN'T BUY VICTORY [P#317]
[ONLY DEFEAT ON BATTLEFIELD]

FIGHTING POWER REAL ALLIED WEAKNESS [P#318]

ALLIES DEPENDED ON QUALITY OF TECHNOLOGY
& FIGHTING EFFECTIVENESS – NOT
JUST SIMPLE NUMBERS

AXIS POWERS DID NOT CHANGE BASIC PATTERN OF
MILITARY ORGANIZATION & OPERATIONAL
PRACTICE OR REFORM / MODERNIZE THE
WAY THEY MADE WAR VERY MUCH - EARLY
VICTORIES MADE PRESSURE TO DO SO LESS

GERMANY & JAPAN PLACED LESS EMPHASIS ON
NONCOMBAT AREAS OF WAR – SUPPLIES

IN PACIFIC 18 AMERICAN PERSONNEL PER SERVICEMAN
JAPANESE 1:1 [P#319]

GERMAN ARMY 1:2 & USA ALMOST REVERSE 2:1

GERMANY & JAPAN HIGHLY MILITARISED SOCIETIES

ALLIED FORCES SUPPORTED BY LARGE CIVILIAN
APPARATUS & MANY SENIOR COMMANDERS
WERE CIVILIANS IN UNIFORM [P#319-320]

GOOD QUOTE BY AUTHOR [P#320]

**ALLIES COMMITTED TO RATIONAL EXPLOITATION
OF MODERNITY**

**AXIS PRESS MODERNITY INTO SERVICE
OF IRRATIONAL OR REACTIONARY CAUSES**

STILL MARGIN OF VICTORY OR DEFEAT **SLENDER**

BATTLES NOT PREORDAINED, IF WERE, NO ONE WOULD
FIGHT THEM!!! [P#320]

CHEAP LITTLE THINGS [LOW TECH], LUCK COULD BE DECISIVE:

10 BOMBS OUT OF HUNDREDS HIT TARGETS & DECISIVE AT MIDWAY

SMALL NUMBER LONG RANGE AIRCRAFT TO COVER ATLANTIC
GAP IN SUB WARFARE MADE VICTORY POSSIBLE

LONG RANGE FUEL TANKS FOR ESCORT FIGHTERS SAVED
BOMBING PROGRAM – A TINY EXPENSE VERSUS OVERALL
COST OF BOMBING PROGRAM

AT STALINGRAD A FEW THOUSAND MEN HELD UP GERMAN 6TH
ARMY UNTIL TRAP SPRUNG

STRONG GERMANY HAD TO BE DEFEATED FIRST

USA USED ONLY 15% OF WAR EFFORT ON JAPAN
& 85% ON GERMANY [P#321]

EASTERN RUSSIAN FRONT SCALE & GEOGRAPHICAL
EXTENT DWARFED ALL EARLIER WARFARE

LOSSES ON BOTH SIDES FAR EXCEEDED LOSSES
ANYWHERE ELSE IN THE MILITARY CONTEST

GERMANS KEPT MORE TANKS, GUNS & TACTICAL
AIRCRAFT IN EAST THAN ON OTHER FRONTS
THROUGHOUT WAR

EVEN IF HITLER HAD JUST STOPPED WITH
CONQUEST OF EUROPE & JAPAN
SOUTHEAST ASIA – A MUCH DIFFERENT
WORLD WOULD HAVE RESULTED

EVENTUALLY, WOULD THEY BOTH BE STRENGTHENED
ENOUGH FOR EVENTUAL CONQUEST OF WORLD ?

WOULD A SERIES OF COMPROMISES SLOWED THIS
EVENTUALITY ?

CERTAINLY TRADITIONAL WESTERN VALUES, MORALS,
ETHICS, ETC. WOULD HAVE BEEN LOST TO
MUCH MORE “DRACONIAN” LIVING [? - EXISTING?]
CONDITIONS UNDER GERMAN & JAPAN DOMINANCE

WOULD GERMANY & JAPAN THEN FIGHT EACH OTHER
EVENTUALLY FOR OVERALL DOMINATION OF WORLD ?

ONCE IN POWER, COULD ANYTHING EVER BE DONE TO
CHANGE THE SITUATION ?

UNINTENTIONAL CONSEQUENCES OF WW II

COMMUNISM ESTABLISHED

SOVIET UNION & USA NOW BIGGEST
SUPER POWERS

BRITAIN & FRANCE VERY MINOR POWERS

JAPAN & GERMANY INDUSTRY PROSPERED
AFTER WAR SINCE “STARTING FROM
SCRATCH,” HELPED BY USA &
HIGHLY MOTIVATED

ATOMIC AGE & COLD WAR BEGAN & CONTINUED
AT GREAT EXPENSE

AROUND 1980-'S TOO EXPENSIVE FOR RUSSIA
SO ONLY USA LEFT AS LONE SUPER
POWER

CONCEPT OF TOTAL WAR – MILITARY & CIVILIANS
ON BOTH SIDES – TECHNOLOGY NOW
PROVIDED THE MEANS

CRIMINALIZATION OF WAR – NAZI'S

CONTROVERSY OVER ATOMIC BOMB:

JAPAN WAS ON VERGE OF SURRENDER
DUE TO BOMBING CAMPAIGN

BUT WAS IT NEEDED TO “PUSH THEM OVER
THE EDGE” TO SURRENDER

IT CERTAINLY SAVED MANY LIVES IF IT WAS
A SIGNIFICANT FACTOR MAKING
AN INVASION WAS NOT NECESSARY

WAS REVENGE A PART OF DECISION TO USE IT
DUE TO ALL OF ATROCITIES OF WAR?

MANY UNANSWERED & UNANSWERABLE
QUESTIONS

EVEN FOR USA, DEVELOPMENT OF THE ATOMIC BOMB WAS A MONSTROUS SCIENCE & TECHNOLOGICAL FEAT INVOLVING AN INCREDIBLE AMOUNT OF RESOURCES OF SO MANY DIFFERENT KINDS – HUMAN, MATERIALS, EQUIPMENT, ETC.

USA PROBABLY ONLY NATION CAPABLE OF SUCCESSFULLY COMPLETING THIS PROJECT IN THE TIME FRAME & RESOURCES REQUIRED & AVAILABLE

CERTAINLY, IT CHANGED SCIENCE FOR EVER – LOSS OF CONTROL OF PRODUCTS OF SCIENCE TO POLITICIANS!

BUT RUSSIA SOON HAD THE ATOMIC BOMB ALSO AFTER WW II

NOW MANY COUNTRIES ARE SAID TO HAVE SOME NUCLEAR CAPABILITY NOW ?

SHOWS HOW SCIENCE & TECHNOLOGY SPREADS SO EASILY

BUT USA LOST MUCH OF “WILL” FOR MANY THINGS

VIETNAM WAR, AFGANISTAN, IRAQ, ETC.

KOREAN WAR MAY HAVE BEEN SIGNAL OF THIS
TRANSITION

DID WE BECOME TOO COMPLACENT, TOO RICH,
TO SELF ASSURED / SATISFIED, ETC.

RISE OF SO MANY POLITICAL & OTHER SCANDALS

DOMINANCE OF MILITARY, INDUSTRIAL & CONGRESSIONAL
COMPLEX – NEED & FOSTER WARS FOR OWN
BENEFIT – GREAT POSITIVE & NEGATIVE EFFECT ON STS

ARE WE IN DECLINE NOW LIKE BRITISH EMPIRE?

RISE OF CHINA & INDIA AS ECONOMIC POWERS

WILL WARS NOW BE FOUGHT IN ECONOMIC TERMS, SINCE IN MILITARY TERMS THE WORLD CAN BE DESTROYED BY MASSIVE AMOUNTS OF ATOMIC WEAPONS & PROLIFERATION OF SUCH WEAPONS

RISE OF TERROISM TO PUSH "WILL," MORALS, ETHICS, CHARACTER, INTEGRITY, ETC. TO LIMITS

SUCCESSFUL GURRILLA WARFARE AGAINST MILITARY BASICALLY PREPARED TO FIGHT MORE CONVENTIONAL WARS

CYBER WARFARE ?

READ TOM CLANCY !!!

IS USA IN ECONOMIC DECLINE LIKE MANY OTHER
NATIONS DUE TO HEAVY INVOLVEMENT
IN MILITARY ACTIONS – E.G. PAUL KENNEDY
“RISE & FALL OF GREAT POWERS”

HAS OUR “WILL” TO DO GOOD BEEN SAPPED BY
OUR PAST SUCCESSES?

HAVE WE JUST BECOME “LAZY” & SELF SATISFIED
& SELF CENTERED – HEDONISM???

HAS THERE BEEN “EDUCATIONAL DISARMAMENT” –
WITH SERIOUS ISSUES IN EDUCATION
SYSTEM?

MONEY TALKS!

IT PROVIDES THE FUEL FOR GOOD & EVIL

IT LUBRICATES SOCIETY!

IT CAN FUND “BAD” SCIENCE & TECHNOLOGY FOR
THE WRONG PURPOSES

IS MONEY GETTING INTO THE WRONG HANDS
TO FUEL THE DESTRUCTION OF SOCIETY
AS WE NOW KNOW IT?

OIL, ILLEGAL & LEGAL DRUGS ARE BIG SOURCES
OF MONEY – OTHER COUNTRIES ARE
NOW DOMINANT IN THESE AREAS

ADDITIONS

IN MACHINE GUN BOOK BY JOHN ELLIS

PAGE # 56

HAIG EVEN IN 1926 NOTES –

IN REVIEWING BOOK BY LIDDEL-HART,
HAIG ASSERTS HORSE NOT EXTINCT
ON BATTLEFIELD

IN FUTURE, VALUE & OPPORTUNITY OF
HORSES TO BE AS GREAT AS EVER

AEROPLANES & TANKS JUST ACCESSORIES
TO MAN & HORSE – WILL FIND HORSES USED
JUST AS MUCH AS IN PAST

HE ABOVE ALL SHOULD KNOW THIS **NOT** SO

MACHINE GUNS JUST DEVASTATED
CALVARY

FAITH IN CALVARY BECAME A LITTLE ECCENTRIC
BUT PART OF ORTHODOX BELIEFS OF MILITARY
SYSTEM AT THAT TIME

“FOND RECOLLECTIONS OF WAR AS IT ONCE WAS!”

“TRUE CALVARY SPIRIT SCORNS MATHEMATICAL
CALCULATIONS”

“CULT OF THE HORSE & SWORD” - LAST DESPERATE
EFFORT TO WITHSTAND DEPERSONALIZATION OF WAR

TOM CLANCY AND ALL HIS SO EXCELLENT NOVELS + FOUR [4]
MADE INTO MOVIES

HAS DIED IN 2013 WITH LAST NOVEL & MOVIE COMING OUT

BUT SHOWED SO WELL THE MANY COMPLEXITIES OF
THE MODERN AGE OF WARFARE

JUST DO A GOOGLE SEARCH OF COURSE

I CANNOT POSSIBLY SUMMARIZE ALL ABOUT HIM

I READ MOST OF HIS LONG BOOKS [OVER 500 PAGES] &
WATCHED HIS DVD'S MORE TIMES THAN I CAN REMEMBER

A KEY IN MY DECADES OF STS – NSF RESEARCH OBVIOUSLY !

TO BE CONTINUED AS

INTEREST &

RESOURCES PERMIT

JUST LET ME KNOW !