INTEGRATED STRIKE & INTERDICTION PLAN

DESIGNATED TARGET LIST

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SCRIPT

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THE INTEGRATED STRIKE AND INTERDICATION PLAN (ISIP) IS A TWO PART PROPOSAL. THE TWO PARTS ARE A STRIKE PLAN AND AN INTERDICATION PLAN. THEY HAVE BEEN CONSIDERED SEPARATELY FOR CONVENIENCE OF PRESENTATION; HOWEVER, THEY ARE COMPLEMENTARY AND CONSTITUTE A SINGLE CONCEPT.

THE FIRST PHASE OF THE ISIP WAS PRESENTED IN FEBRUARY 1967 AND SPECIFICALLY DEFINED THE PLAN FOR INTERDICATION WHICH WAS DIRECTED TO THE AREA ILLUSTRATED ON THIS SLIDE IN YELLOW. AT THAT TIME IT WAS POINTED OUT THAT THERE WAS A CORRESPONDING AND RELATED REQUIREMENT FOR A BROADENED TARGET LIST. THIS BRIEFING IS CONCERNED WITH THE STRIKE PHASE AND THE TARGET LIST REFERENCED IN GENERAL TERMS IN THE INTERDICATION PHASE OF ISIP, AND IS DIRECTED ONLY TO THE AREA OF NVN ILLUSTRATED IN RED.

NEITHER OF THE TWO PARTS SHOULD BE CONSIDERED IN ISOLATION SINCE THEY ARE COMPONENTS OF A SINGLE DYNAMICALLY INTEGRATED SYSTEM FOR OBTAINING MAXIMUM VALUE FROM TOTAL AIR RESOURCES AVAILABLE FOR APPLICATION AGAINST NVN. THIS BRIEFING WILL SPECIFICALLY DEFINE THE "BROADENED TARGET BASE" PREVIOUSLY STATED AS AN ISIP REQUIREMENT. ADDITIONALLY, AND OF EQUAL
IMPORTANCE, THE BRIEFING WILL DESCRIBE THE METHODOLOGY USED TO DEFINE AND SELECT THE TARGETS WITHIN THE BROADENED TARGET BASE.

SLIDE 2

THE BRIEFING WILL PROGRESS THROUGH THESE SUBJECTS IN THE ORDER SHOWN.

SLIDE 3  TARGET GROUPINGS

THESE ARE THE TARGET GROUPINGS WHICH WILL BE ADDRESSED IN THIS BRIEFING; TARGETS WITHIN THESE GROUPINGS HAVE BEEN SELECTED FOR THE BROADENED TARGET BASE. THE TOTAL TARGET BASE IN NVN WAS EXAMINED; ALL TARGETS WHICH HAVE BEEN CONSIDERED AND RECOMMENDED BY JCS, CINCPAC AND THE AIR STAFF ARE CONTAINED WITHIN THESE GROUPINGS. THE STUDY VALIDATES MILITARY JUDGEMENTS EXPRESSED IN PAST RECOMMENDATIONS TO SYSTEMATICALLY ATTACK KEY TARGETS IN NVN, ON A BASIS THAT WILL RESULT IN BRINGING THE GREATEST PRESSURE TO BEAR ON THE NVN ECONOMY WITH MINIMUM CIVILIAN CASUALTIES. THE STUDY ALSO CONFIRMS THE AIR STAFF CONVICTION THAT INCREASED EFFECTIVENESS CAN BE ACHIEVED BY AIR POWER AND CONVENTIONAL WEAPONS WHEN TARGETS ARE ATTACKED AS TOTAL SYSTEMS.

SLIDE 4  NVN ECONOMY AND TARGET GROUPING INTERRELATIONSHIPS

THE TARGETING METHODOLOGY EMPLOYED TO SELECT TARGETS FOR THE BROADENED TARGET BASE, EXPLORED IN DEPTH THE INTERRELATIONSHIPS WHICH EXIST BETWEEN THE NVN ECONOMY AND ALL TARGETS.
INTERRELATIONSHIPS REFERRED TO ARE DETERMINED BY SYSTEMATIC ANALYSIS OF THE ECONOMY OF NVN, USING EACH OF THE THREE STEPS WHICH ARE SHOWN ON THIS SLIDE. THIS IS A NEW APPROACH TO TARGETING AND ONE WHICH IS BASED ON A TECHNIQUE REFERRED TO AS ECONOMETRICS. IF THAT TERM IS NEW TO YOU, IT IS SIMPLY DEFINED IN THIS INSTANCE AS A STUDY OF THE COMBINATION OF ECONOMICS, TECHNOLOGY AND STATISTICS APPLIED TO THE ECONOMY OF NVN.

SLIDE 5 SOURCES OF DATA

IN EXPLORING ECONOMETRIC TARGETING, DATA SOURCES INDICATED ON THIS SLIDE WERE USED.

SLIDE 6

PRODUCT OF THE ECONOMETRIC TECHNIQUE IS SHOWN ON THIS SLIDE.

ONCE DEFINED, ELEMENTS OF THE ECONOMY, BOTH DOMESTIC AND IMPORTED, CAN BE GROUPED TOGETHER AS TARGET SYSTEMS AND CONSIDERED IN PRIORITY FOR ATTACK. AIR STRIKES ON THE TARGET SYSTEMS DEFINED WILL THEN RESULT IN MAXIMUM AND MEANINGFUL IMPACT ON NVN'S ABILITY TO SUPPORT THE CONFLICT IN SVN. CONVERSELY, IF THE RECOMMENDED TARGET SYSTEMS ARE NOT APPROVED AS A PACKAGE, IT IS BELIEVED THE ENEMY CAN CONTINUE TO ACCOMODATE TO, AND RECOVER FROM, ATTACKS WHICH FOLLOW THE CURRENTLY ESTABLISHED PATTERN OF FRAGMENTED AIR POWER EMPLOYMENT.

APPLICATION OF THE ECONOMETRIC TECHNIQUE TO A NATIONAL
ECONOMY IS COMPLEX AND HAS REQUIRED THOROUGH TIME CONSUMING STUDY. COMPLETE UNDERSTANDING OF THE COMPLEXITY OF THE EXERCISE AND THE DETAIL TO WHICH THE STUDY GOES WILL LEAD TO A GREATER CONFIDENCE FACTOR IN THE PRODUCT OF THE STUDY. THEREFORE, AN EXPLANATION OF METHODOLOGY WILL FOLLOW.

SLIDE 7 METHODOLOGY - INPUT/OUTPUT MATRIX

THE STUDY HAS SHOWN THAT A DETAILED ANALYSIS OF INPUT/OUTPUT INTERRELATIONSHIPS OF NVN ECONOMY AND TARGET GROUPINGS IS BASIC TO EFFECTIVE TARGETING. THE ANALYSIS IS ACCOMPLISHED IN THE THREE STEPS PREVIOUSLY SHOWN, USING THE INPUT/OUTPUT MATRIX. THE PURPOSE OF THIS SLIDE IS TO ACQUAINT YOU WITH THE THREE MATRICES USED IN THE THREE-STEP ANALYSIS.

THIS IS THE ECONOMY TO ECONOMY MATRIX WHICH IS USED IN A ONE-STEP ECONOMETRIC ANALYSIS. IT IS THE FIRST MATRIX OF THREE TO BE EXPLAINED. THERE ARE NINE STANDARD TEXTBOOK CATEGORIES OF AN ECONOMY; THESE WERE DEVELOPED BY A HARVARD PROFESSOR, DR. LEONTIEF, AND ARE SHOWN HERE DOWN THE LEFT SIDE AND ACROSS THE TOP OF THE SLIDE. WITHIN THESE GENERAL CATEGORIES, INDIVIDUAL INDUSTRIES AND SERVICES SIGNIFICANT TO AN ECONOMY CAN BE DEFINED AND ANALYZED.

LATER IN THE BRIEFING, THESE NINE CATEGORIES WILL BE BROKEN DOWN INTO 48 SUB-CATEGORIES SPECIFICALLY APPLICABLE TO THE
ECONOMY OF NVN. EACH MATRIX IS USED AS A TOOL TO SHOW OUTPUTS FROM CATEGORIES WHICH WILL BE LISTED ON THE LEFT WHICH INPUT TO, OR SUPPORT, CATEGORIES LISTED ACROSS THE TOP. THIS DIRECTION OF SUPPORT FLOW IS INDICATED BY THE INPUT/OUTPUT ARROWS. AFTER A BRIEF GRAPHIC ILLUSTRATION OF HOW THIS BASIC MATRIX, THE FIRST OF THREE, IS EXPANDED TO THE SECOND AND THIRD MATRICES, THE ENERGY CATEGORY, WHICH IS THE THIRD ITEM LISTED, WILL BE USED TO ILLUSTRATE HOW EACH OF THESE NINE CATEGORIES IS ANALYZED IN DETAIL, USING THE INPUT/OUTPUT MATRIX.

FLIP 1

ILLUSTRATES THE ECONOMY TO TARGET GROUP MATRIX USED IN THE SECOND STEP. NOTE THAT 9 ECONOMY CATEGORIES REMAIN ON THE LEFT IN YELLOW, AND SHOW OUTPUTS TO THE 10 TARGET GROUPS WHICH ARE NOW LISTED ACROSS THE TOP OF THE MATRIX IN GREEN. THESE ARE THE 10 TARGET GROUPINGS PREVIOUSLY SEEN ON SLIDE 3.

FLIP 2

THIS IS THE TARGET GROUP TO TARGET GROUP MATRIX WHICH IS USED IN THE THIRD OF THREE STEPS. THE ECONOMY CATEGORIES ON THE LEFT HAVE NOW BEEN REPLACED WITH THE 10 TARGET GROUPINGS. DETAILED STUDY OF THIS THIRD STEP MATRIX WILL SHOW INTERRELATIONSHIPS OR SUPPORT FROM THE TARGET GROUPINGS ON THE LEFT FOR THE TARGET GROUPINGS ACROSS THE TOP. IN SUMMARY, THIS ONE SLIDE
HAS GRAPHICALLY ILLUSTRATED THE EXPANSION OF THE PURE ECONOMETRIC
MODEL FROM A ONE-STEP TO A THREE-STEP EXERCISE FOR TARGETING.
The energy category of the economy will now be tracked through
these same three steps to illustrate specific productivity of
the technique for targeting.

SLIDE 8 METHODOLOGY (ENERGY) ECONOMY TO ECONOMY

THIS IS AN ECONOMY TO ECONOMY MATRIX. IT IS THE SAME KIND
OF MATRIX ILLUSTRATED ON THE LAST SLIDE AS THE FIRST STEP, EXCEPT
IT IS MODIFIED TO SHOW ONLY THE ENERGY CATEGORY OF THE ECONOMY
ON THE OUTPUT SIDE. NOTE THE BREAK-OUT OF THE ENERGY CATEGORY
WHICH INDICATES THE ECONOMY OF NVPN INCLUDES (OR USES) FOUR SUB-
CATEGORIES OF ENERGY: PETROLEUM, THERMAL ELECTRICAL POWER, HYDRO
ELECTRICAL POWER, AND COAL. THE NINE GENERAL CATEGORIES OF
ECONOMY ARE LISTED ACROSS THE TOP OF THE SLIDE, WHICH OF COURSE,
ALSO INCLUDES THE ENERGY CATEGORY, WITHOUT THE SUB-CATEGORY
DIVISION.

FLIP 1

AS PREVIOUSLY MENTIONED, THE NINE GENERAL CATEGORIES OF THE
NVPN ECONOMY ARE DIVIDED INTO 48 SUB-CATEGORIES, IDENTIFIED AS
INDIVIDUAL INDUSTRIES AND SERVICES MEANINGFUL TO THE GOVERNMENT
OF NVPN. THESE 48 SUB-CATEGORIES ARE ARRANGED BY CATEGORY AT THE

FLIP 2

THIS GRAPHIC PROCEDURE OF COLOR CODING WILL BE USED TO SHOW INTERRELATIONSHIPS. BY FOLLOWING THE SUCCEEDING FLIPS, THE CATEGORY TO SUB-CATEGORY RELATIONSHIPS WILL BE EVIDENT. IN THIS FIRST ILLUSTRATION, THE YELLOW DOT OPPOSITE PETROLEUM AND UNDER GOVERNMENT SERVICES IS EXPANDED ON THE LOWER HALF OF THE SLIDE IN YELLOW DOTS TO INDICATE SUPPORT IS PROVIDED FOR ALL SIX SUB-CATEGORIES OF GOVERNMENT SERVICES. THE GREEN COLOR CODE INDICATES THERMAL POWER ALSO SUPPORTS SIX SUB-CATEGORIES OF GOVERNMENT SERVICES; AND COAL, THE RED COLOR CODE, SUPPORTS ONE SUB-CATEGORY OF GOVERNMENT SERVICES. IF YOU WILL ACCEPT FOR THE MOMENT WITHOUT FURTHER ELABORATION, THAT THIS AND OTHER INTERRELATIONSHIPS TO BE SHOWN, DO EXIST, THE BRIEFING WILL LATER PROVIDE A TOTAL ANALYSIS.

FLIP 3 SERVICES

SHOWS SUB-CATEGORIES IN THE SERVICES CATEGORY WHICH ARE SUPPORTED BY ENERGY.
FLIP 4 ENERGY

ENERGY SUB-CATEGORY INTERRELATIONSHIPS.

FLIP 5 FINAL NON-METAL

SUPPORT FOR FINAL NON-METAL PRODUCTION.

FLIP 6 FINAL METAL

SUPPORT FOR FINAL METAL PRODUCTION.

FLIP 7 NON-METAL

SUPPORT FOR NON-METAL PRODUCTION.

FLIP 8 METAL PRODUCTION

SUPPORT FOR METAL PRODUCTION.

FLIP 9 BASIC NON-METAL

SUPPORT FOR BASIC NON-METAL.

FLIP 10 BASIC METAL

SUPPORT FOR BASIC METAL.

AS ONE WOULD EXPECT, THE ENERGY CATEGORY IS AN IMPORTANT ELEMENT OF THE NVN ECONOMY. HOWEVER, IT WAS NECESSARY TO EXPLORE THE ENERGY CATEGORY IN THIS LENGTHY YET RELATIVELY SIMPLE MANNER TO CONCLUSIVELY DEFINE THE ECONOMETRIC INTERDEPENDENCIES WHICH EXIST. ALTHOUGH NOT GRAPHICALLY APPARENT HERE, ANALYSIS IN DEPTH OF THIS FIRST STEP ALONE (TWO MORE STEPS TO FOLLOW IN A MOMENT) REVEALS THE FOLLOWING DATA IMPORTANT TO TARGETING.

1. THERE ARE ONLY FOUR SUB-CATEGORIES OF ENERGY USED IN THE
ECONOMY OF NVN.

2. SUMMARIZING INTERRELATIONSHIPS SHOWN BY COLOR CODE:
   a. THE YELLOW DOTS INDICATE THERE ARE 4 CATEGORIES AND 13 SUB-CATEGORIES IN THE NVN ECONOMY THAT DEPEND ON PETROLEUM AS AN ENERGY SOURCE.
   b. THE GREEN DOTS INDICATE 7 CATEGORIES AND 33 SUB-CATEGORIES DEPEND ON THERMAL ELECTRICAL POWER.
   c. SHOWN IN BLUE, 3 CATEGORIES AND 3 SUB-CATEGORIES DEPEND ON HYDRO ELECTRICAL POWER.
   d. IN RED, 4 CATEGORIES AND 5 SUB-CATEGORIES DEPEND ON COAL.
   e. AND ACROSS THE TOP OF THE SLIDE, 5 OF THE 9 CATEGORIES DEPEND ON MORE THAN ONE ENERGY SUB-CATEGORY.

3. OTHER DATA COLLECTED TO COMPLETE THIS ANALYSIS REVEALED:
   a. THERMAL ELECTRIC POWER PLANTS ARE BOTH FIXED AND PORTABLE.
   b. NINE FIXED THERMAL POWER PLANTS PROVIDE 88.3% OF THE NATIONAL CAPACITY.
   c. THESE 9 FIXED THERMAL POWER PLANTS ARE COAL DRIVEN.
   d. TWO FIXED HYDRO ELECTRIC PLANTS PRODUCE 2.4% OF THE NATIONAL CAPACITY.
   e. PORTABLE PLANTS CAN BE USED AS AN ALTERNATE SOURCE OF THERMAL POWER.
f. PORTABLE POWER PLANTS ARE POL DRIVEN.
g. PETROLEUM IS 100% IMPORTED.
h. AND FINALLY, COAL IS A DOMESTIC PRODUCT MINED IN
SUFFICIENT QUANTITIES TO SATISFY REQUIREMENTS OF THE ECONOMY
AND PROVIDE AN EXPORT COMMODITY.

THE SUMMARY WHICH FOLLOWS THE NEXT TWO SLIDES WILL ILLUSTRATE
HOW FURTHER ANALYSIS LEADS TO LOGICAL TARGETING OF TOTAL SYSTEMS.

SLIDE 9  ECONOMY TO TARGET GROUPS (ENERGY)

THIS IS THE ECONOMY TO TARGET GROUP MATRIX, AGAIN MODIFIED
TO SHOW ONLY THE ENERGY CATEGORY ON THE OUTPUT SIDE. USING THE
SAME GRAPHIC PROCEDURE, THIS SLIDE WILL SHOW TO WHAT DEGREE THE
ENERGY CATEGORY SUPPORTS THE 10 TARGET GROUPINGS WHICH ARE NOW
SHOWN AT THE TOP OF THE SLIDE.

FLIP 1

LISTED ON THE LOWER HALF OF THE SLIDE AND SEEN FOR THE FIRST
TIME ARE THE 34 SUB-CATEGORIES OF THE TARGET GROUPS. THESE SUB-
CATEGORIES HAVE BEEN TAKEN FROM THE 48 ECONOMY SUB-CATEGORIES AND
RE-ARRANGED AND COMBINED INTO 34 TARGET GROUP SUB-CATEGORIES.

FLIP 2

SHOWS THE SUPPORTING INTERRELATIONSHIPS TO AIRFIELDS AND
INDUSTRY.
FLIP 3
INTERRELATIONSHIPS TO TRANSPORTATION AND MILITARY GROUPS.

FLIP 4
COMMAND AND CONTROL, AND POL INTERRELATIONSHIPS.

FLIP 5
NO RELATIONSHIP WITH LOCKS AND DAMS; RELATIONSHIPS AS SHOWN WITH THE EXTRACTIVE TARGET GROUP, PORTS, AND ELECTRIC POWER.

AFTER THE NEXT MATRIX IS DISCUSSED, A COMPLETE SUMMARY OF THE ENERGY CATEGORY WILL BE PROVIDED.

SLIDE 10 RELATIONSHIP OF NVN TARGET GROUP TO TARGET GROUP

THIS IS THE THIRD MATRIX AND IS THE ONE WHICH WAS USED TO ANALYZE TARGET GROUP TO TARGET GROUP RELATIONSHIPS. THIS IS A COMPLETE MATRIX WITH THE 10 TARGET GROUPS LISTED VERTICALLY AND HORIZONTALLY.

NOTE THAT WHEN THE ENERGY CATEGORY IS RE-ARRANGED FROM AN ECONOMY CATEGORY TO A TARGET GROUP CATEGORY, THE SUB-CATEGORIES FALL INTO 3 TARGET GROUPS--POL, COLOR CODE YELLOW; COAL, COLOR CODE RED; AND ELECTRIC POWER, COLOR CODE GREEN. AS A TARGET GROUP, ELECTRIC POWER INCLUDES THERMAL POWER (FIXED & PORTABLE) AND HYDRO ELECTRIC POWER. POL DOES NOT REQUIRE QUALIFICATION, AND COAL IS ONE OF THE FOUR EXTRACTIVE SUB-CATEGORIES AS SHOWN. INTERRELATIONSHIPS WILL BE SHOWN ON THE FOLLOWING FLIPS.
SHOWN IN YELLOW ARE THE TARGET GROUPS SUPPORTED BY POL.

IN RED, COAL PROVIDES SUPPORT AS SHOWN.

AND IN GREEN, PORTABLE AND FIXED ELECTRIC POWER SUPPORT.


SLIDE 11 PETROLEUM
SLIDE 12 THERMAL POWER PLANTS
SLIDE 13 HYDRO POWER PLANTS
SLIDE 14 COAL
SLIDE 15 ENERGY CATEGORY ANALYSIS SUMMARY

TRACKING THE ENERGY CATEGORY THROUGH THE 3-STEP ECONOMETRIC TECHNIQUE FOR TARGETING HAS DEMONSTRATED THE METHODOLOGY USED TO ANALYZE ALL OTHER CATEGORIES OF THE NVN ECONOMY AND TARGET SYSTEMS. A CONDENSED ANALYSIS OF ALL OTHER TARGET GROUPS WILL FOLLOW.
SLIDE 16  PART III - ANALYSIS SUMMARY
TARGET GROUP TO TARGET GROUP MATRIX

THIS IS A COMPLETE TARGET GROUP MATRIX WHICH WILL BE USED AS A GRAPHIC TOOL TO PRESENT THE CONDENSED ANALYSIS. TO BRIEF A COMPLETE ANALYSIS OF ALL CATEGORIES WOULD BE REDUNDANT; HOWEVER, THIS BRIEF SUMMARY OF EACH IS REQUIRED TO PROGRESS TO A POINT OF UNDERSTANDING AS TO WHY CERTAIN TARGET GROUPINGS, TO BE PRESENTED LATER IN THE BRIEFING, WERE SELECTED.

GENERALLY, THE IMPORTANCE OF A TARGET GROUP CAN BE DETERMINED BY THE NUMBER OF INTERRELATIONSHIPS WHICH OCCUR WITH ALL OTHER TARGET GROUPS.

FLIP 1

WITH NUMBERS OF INTERRELATIONSHIPS AS A BASIS FOR IMPORTANCE, IT APPEARS FROM THIS MATRIX THAT THE 4 CATEGORIES NOW SHOWN IN RED--ELECTRICAL POWER, TRANSPORTATION, POL, AND PORTS--ARE THE MOST LOGICAL CHOICES FOR ATTACK. HOWEVER, IMPORTANT IS THE FACT THAT SOME INTERRELATIONSHIPS INDICATED ARE OF FAR GREATER IMPORTANCE THAN OTHERS. FOR EXAMPLE:

FLIP 2

THE SUPPORT POL GIVES TO TRANSPORTATION IS OF GREATER SIGNIFICANCE THAN THAT PROVIDED BY IRON AND STEEL. THEREFORE, THE DECISION TO ATTACK A TARGET GROUP OR PORTION OF A TARGET GROUP

13
MUST BE BASED UPON FURTHER DETAILED ANALYSIS OF THESE INTER-
RELATIONSHIPS. FURTHER, ALTHOUGH ONE TARGET GROUP MAY APPEAR
BY NUMBER OF INTERRELATIONSHIPS TO BE OF VITAL IMPORTANCE, IT
MAY NOT BE NECESSARY TO ATTACK IT DIRECTLY, SINCE THROUGH INTER-
RELATIONSHIPS, THE TARGET MAY BE NEUTRALIZED AS A RESULT OF ATTACK
ON ANOTHER TARGET GROUP. THE CONDENSED ANALYSIS OF EACH TARGET
GROUP ON THIS SLIDE WILL NOW BE BRIEFED.

FLIP 3

ELECTRICAL POWER

STARTING AT THE TOP OF THIS MATRIX, THE IMPORTANCE OF
ELECTRICAL POWER HAS ALREADY BEEN POINTED OUT IN PREVIOUS DIS-
CUSSION OF THE ENERGY CATEGORY. INTERRELATIONSHIPS ARE SEEN
HERE AGAIN. ALL OTHER TARGET GROUPS USE THERMAL ELECTRICAL POWER,
EITHER FIXED OR PORTABLE. DENIAL OF THIS COMMODITY WOULD HAVE
AN ACROSS-THE-BOARD EFFECT ON THE ECONOMY. HOWEVER, ANALYSIS
SHOWS THAT THE ENTIRE SYSTEM, FIXED AND PORTABLE, MUST BE
NEUTRALIZED TO ACHIEVE THE DESIRED IMPACT. CONVERSELY, MINIMAL
IMPACT WILL BE ACHIEVED THROUGH PIECEMEAL ATTACK ON THE SYSTEM.

FLIP 4

AIRFIELDS

FROM A PURELY INPUT/OUTPUT RELATIONSHIP, ATTACKING THE
AIRFIELD TARGET GROUP WILL HAVE LITTLE DIRECT IMPACT UPON THE
ECONOMY. AIRFIELDS ARE, HOWEVER, AN IMPORTANT SEGMENT OF THE
MILITARY DEFENSIVE SYSTEM AND A REDUCTION IN THEIR EFFECTIVENESS
AS A RESULT OF ATTACK WOULD ENHANCE THE PROBABILITY FOR SUCCESS OF ATTACKS AGAINST OTHER TARGET GROUPS, AND REDUCE ATTRITION. IN ADDITION, AIRFIELDS PROVIDE AN ALTERNATIVE MEANS TO RECEIVE IMPORTS.

FLIP ___5___

INDUSTRIAL

INTERDEPENDENCIES BETWEEN THE INDUSTRIAL TARGET GROUP AND OTHERS ARE NOT NUMEROUS, BUT SOME ARE IMPORTANT. THE SINGLE CEMENT PLANT IN NVN IS, FOR EXAMPLE, CRITICAL TO CONSTRUCTION OF: AIRFIELDS, BRIDGES, MILITARY INSTALLATIONS, ROADS, RAILROADS AND HARBOR FACILITIES. WITHOUT THE HAIPHONG CEMENT PLANT, ALL CEMENT, FREQUENTLY A PERISHABLE COMMODITY IN THE TROPIES, WOULD HAVE TO BE IMPORTED. THROUGH DETAILED ANALYSIS, THE IMPORTANCE OF THE INDUSTRIAL TARGET GROUP TO THE ECONOMY OF NVN AND TO ITS WAR POTENTIAL IS MORE APPARENT THAN CAN BE READILY SEEN BY SIMPLY COUNTING THE NUMBER OF INTERDEPENDENCIES.

FLIP ___6___

TRANSPORTATION

THE TRANSPORTATION TARGET GROUP, CONSISTING OF THE RAIL, WATERWAY, AND ROAD SYSTEMS, IS VITAL TO THE ECONOMY, EVIDENCE THE NUMBER OF INTERRELATIONSHIPS WITH OTHER TARGET GROUPS.

THE SUPPORT LOC SYSTEMS PROVIDE FOR ALL TARGET GROUPS IS OBVIOUS. INTERDICTION OF LOCs TO REDUCE IMPORTS IS REQUIRED AND WILL BE COVERED LATER.
MILITARY TARGET GROUP

IN THE MILITARY TARGET GROUP THE LOW RATIO OF INTERRELATIONSHIPS INDICATES THAT THIS GROUP DOES NOT DIRECTLY SUPPORT OTHER TARGET GROUPS TO A SIGNIFICANT DEGREE. THE SUPPLY SUB-GROUP SUPPORTING COMMAND AND CONTROL IS THE MOST IMPORTANT. THE NVN ECONOMY DOES NOT PRODUCE MILITARY HARDWARE; MOST MUST BE IMPORTED. THEREFORE, EFFECTIVENESS OF THE MILITARY TARGET GROUP COULD BE SIGNIFICANTLY REDUCED THROUGH DENIAL OF IMPORTS. ANOTHER CONSIDERATION IN DECIDING WHETHER TO ATTACK THIS GROUP DIRECTLY OR INDIRECTLY IS THAT THE TARGETS ARE GENERALLY SMALL AND WELL DISPERSED, REQUIRING EXCESSIVE SORTIE COMMITMENT WITH LOW PRODUCTIVITY.

COMMAND AND CONTROL

THIS GROUP ALSO HAS A LOW ORDER OF INTERRELATIONSHIPS. IT IS, HOWEVER, LIKE AIRFIELDS, AN IMPORTANT PART OF THE MILITARY DEFENSIVE SYSTEM AND THEREFORE IS OF MAJOR IMPORTANCE.

THE NVN ECONOMY DOES NOT PRODUCE SAMS, RADAR, COMMUNICATION ELECTRONICS, AAA GUNS OR AAA MUNITIONS, ALL OF WHICH MUST BE IMPORTED AND THEREFORE CAN BE NEUTRALIZED BY IMPORT DENIAL OR INDIRECT ATTACK. FOR DIRECT ATTACK BY AIR, DIRECTION CENTERS, FILTER CENTERS AND COMMUNICATION CENTERS BECOME THE MOST LOGICAL TARGETS IN THIS GROUP.
THE IMPORTANCE OF POL TO THE NVN ECONOMY IS CLEARLY EVIDENT; IT IS USED BY ALL OTHER TARGET GROUPS. IT SHOULD BE RE-STATED THAT THE ELECTRICAL POWER, INDUSTRIAL, AND TRANSPORTATION TARGET GROUPS WHICH HAVE ALREADY BEEN SINGLED OUT AS VITAL TO THE ECONOMY, ARE SUPPORTED BY POL. THEREFORE, DENIAL OF POL WOULD AFFECT THESE OTHER VITALLY IMPORTANT TARGET GROUPS SIGNIFICANTLY.

AS PREVIOUSLY STATED, POL IS 100% IMPORTED. THE POL TARGET GROUP HAS ALREADY BEEN SUBJECTED TO CONSIDERABLE AIR ATTACK. THE ORIGINAL JCS TARGETED CAPACITY (131,960 MT) HAS BEEN REDUCED BY 86.5 PER CENT. AS A RESULT, POL IS NO LONGER STORED IN LARGE CONCENTRATION; IT HAS BEEN DISPERSED THROUGHOUT THE COUNTRY. TO ATTEMPT TO SEARCH OUT AND DESTROY NUMEROUS SMALL DISPERSED TARGETS WITH AIR POWER IS UNFEASIBLE.

SINCE POL IS 100% IMPORTED AND WHEN DISPERSED IS NOT A FEASIBLE TARGET FOR AIR, IT IS APPARENT THIS VITAL COMMODITY MUST BE ATTACKED INDIRECTLY THROUGH IMPORT DENIAL.

THE MATRIX INDICATES THAT LOCKS AND DAMS SUPPORT ONLY THE WATER SUB-CATEGORY OF THE TRANSPORTATION TARGET GROUP. ALTHOUGH WATER LOCs ARE AN IMPORTANT ELEMENT OF THE TRANSPORTATION TARGET GROUP, ATTACKING THE LOCKS AND DAMS WILL NOT SIGNIFICANTLY REDUCE
THE CAPACITY OF THE LOC SYSTEM. FURTHER, ATTACKING LOCKS AND
DAMS IN ROUTE PACKAGES V AND VI IS, BY COMPARISON WITH OTHER
TARGET GROUPS IN THAT AREA, COSTLY IN SORTIES FOR THE RESULT
ACHIEVED.

FLIP 11  EXTRACTIVE

THE INTERRELATIONSHIPS SHOWN INDICATE THE EXTRACTIVE TARGET
GROUP PRIMARILY SUPPORTS THE INDUSTRIAL TARGET GROUP, ADDITIONALL
COAL, AS YOU RECALL, IS THE SINGLE ENERGY SOURCE USED TO DRIVE
FIXED THERMAL POWER PLANTS. BOTH INDUSTRY AND THERMAL POWER ARE
KEY TARGET GROUPS. SINCE NVN MINES ARE NOT SUITABLE TARGETS FOR
AIR ATTACK AND THE END ITEMS WHICH THE EXTRACTIVE GROUP SUPPORTS,
SUCH AS FIXED POWER UNITS AND KEY INDUSTRIES, ARE SUITABLE AIR
TARGETS, FURTHER CONSIDERATION OF THIS GROUP AS A TARGET IS NOT
NECESSARY.

FLIP 12  PORTS

THE IMPORTANCE OF THIS PRIME TARGET GROUP HAS BEEN INFERRED
OR DIRECTLY STATED A NUMBER OF TIMES IN THE COURSE OF THIS SUMMARY
PORTS HAVE AN IMPORTANT ACROSS-THE-BOARD INTERRELATIONSHIP SINCE
THE NVN ECONOMY AND THEIR MILITARY OPERATION ARE BASED ON IMPORTS.
IN 1966, 75% OF THE TOTAL IMPORTS CAME THROUGH THE PORT SYSTEM;
AND HAIPHONG, BEING THE MAJOR PORT, HANDLED 80% OF TOTAL MARITIME
SHIPPING. WITH THIS IN MIND, A FINAL ANALYSIS CORRELATION WILL
PRESENTED, WHICH CONSIDERS THE FOLLOWING THREE POINTS:

1. THE INDIVIDUAL ANALYSES OF THE TEN TARGET GROUPS JUST BRIEFED;
2. THE GENERAL CHARACTER OF THE NVN ECONOMY; AND
3. NVN IMPORT REQUIREMENTS.

SLIDE 17  CHARACTER OF THE NVN ECONOMY

THE SIMPLE AND PRIMITIVE CHARACTER OF THE NVN ECONOMY IS BROADLY DEFINED ON THIS SLIDE. THE FIRST FOUR POINTS ARE EASILY UNDERSTOOD; HOWEVER, TO FULLY APPRECIATE THE IMPORTANCE OF ITEM 5, THE DEPENDENCE OF THE ECONOMY ON IMPORTS, REQUIRES A DEEPER ANALYSIS WHICH WILL BE ADDRESSED USING THE NEXT SLIDE.

SLIDE 18

THE RED DOTS ON THIS ECONOMY TO TARGET GROUP MATRIX REPRESENT NVN IMPORTS. THE BLACK DOTS REPRESENT THE DOMESTIC CAPABILITY OF NVN. THREE EXAMPLES OF THE DEPENDENCE OF THE MILITARY OPERATIONS ON IMPORTS WILL FOLLOW.

FLIP

IN THE FINAL METAL CATEGORY, ALL COMMUNICATIONS, ELECTRONIC, AND MOBILE POWER EQUIPMENT REQUIRED TO SUPPORT THE COMMAND AND CONTROL TARGET GROUP SUB-CATEGORIES WHICH ARE SAM, RADAR AND AAA SITES AND THE COMMAND ELEMENT ARE IMPORTED. DISRUPTION OF THESE IMPORTS WOULD REDUCE THE DEFENSIVE CAPABILITY OF THE NVN MILITARY SYSTEM.
In metal products, rails for track repair, bridge girders, and metal containers such as fuel drums, all of which are high consumption items, are imported. Although these items are also fabricated by NVN industry, production is too limited to compensate for loss of imports.

Disruption of the steady import of POL which amounted to 198,194 (just under 200,000) metric tons in 1966 would directly affect the NVN military operation from the buffer zone to SVN; POL comprised 21% of total 1966 imports. The problem of management and distribution of this critical commodity to match widely dispersed requirements would be considerably more difficult if pressures were applied to reduce POL imports.

The slide clearly indicates the importance of imports both to the economy and to military operations. It has often been stated that NVN is highly dependent upon external support and that action should be taken to deny imports. But here, perhaps for the first time, is a visual or graphic illustration of the high order of this dependence.

Removal of the graphic display of imports is still more
DRAMATIC, AND THE EFFECT OF IMPORT DENIAL IS NOW ILLUSTRATED. THE MATRIX INDICATES THAT ANY STRENGTH WHICH THE NVN ECONOMY MAY POSSESS DOMESTICALLY LIES IN RATHER PRIMITATIVE CATEGORIES. THIS, OF COURSE, EXCLUDES SERVICES, WHICH IS A LABOR FUNCTION.

SOME EXAMPLES, ILLUSTRATED IN RED, ARE AGRICULTURE, FORESTRY, CEMENT PRODUCTION, STONE AND CLAY PRODUCTS, BASIC METAL MINING, FIXED ELECTRIC POWER AND COAL MINING. THIS REMAINING DOMESTIC CAPABILITY CANNOT SUPPORT A MILITARY OPERATION. IF THE BLACK DOTS INDICATE THE PATTERN OF DOMESTIC ECONOMIC PROCESSES WITHIN THE NVN ECONOMY, THEN THE RED DOTS, BOTH BY INFERENCE AND CRITICAL ANALYSIS, INDICATE AN IMPORT PATTERN WHICH IS REQUIRED TO PROVIDE THE FULL SPECTRUM OF SUPPORT FOR THEIR MILITARY OPERATION, AND TO SUBSIDIZE CERTAIN DOMESTIC PROCESSES. EFFECTS OF A CAMPAIGN TO DENY IMPORTS WOULD NOT BE IMMEDIATELY APPARENT BECAUSE THE AMOUNT OF ENEMY STOCKPILING IS UNKNOWN. HOWEVER, CONTINUING AIR ACTIONS AGAINST RESUPPLY EFFORTS WOULD CAUSE THE EFFECTS OF IMPORT DENIAL TO MAGNIFY PROGRESSIVELY AS ENEMY WAR SUPPLIES ARE CONSUMED. FURTHER, AND NOT TO BE OVERLOOKED, IS THE FACT THAT WITHOUT IMPORTS SUCH AS BITUMINOUS COAL TO MAKE COKE FOR IRON PRODUCTION, AND SUPER PHOSPHATES TO SUPPLEMENT DOMESTIC PRODUCTION OF FERTILIZERS, THE DOMESTIC ECONOMY WOULD DETERIORATE AND COULD NOT COMFORTABLY
MEET THE BASIC REQUIREMENTS OF THE NVN CIVILIAN POPULATION. WITH THIS FINAL CORRELATION OF INTERRELATIONSHIPS, BASIC ECONOMY AND IMPORT REQUIREMENTS COMPLETED, THE CATEGORY AND TYPE OF TARGETS REQUIRED FOR EFFECTIVE APPLICATION OF AIR POWER BECOME EVIDENT. ONLY THE SELECTION OF INDIVIDUAL TARGETS FOR THE AIR CAMPAIGN AND TARGET WEAPONEERING REMAIN TO BE ACCOMPLISHED.

SLIDE 19

TARGET SELECTION

THE TARGETING EXERCISE CONSIDERED 600 (APPROX) TARGETS IN NVN WHICH, IN MOST INSTANCES, ARE COMMON TO THE JCS LISTING, THE BOMBING ENCYCLOPEDIA (BE) AND THE CINCPAC CONTINGENCY PLANNING FACTOR LIST (CPFL). TARGETS WERE SELECTED AND SYSTEMATICALLY GROUPED SO THAT WHEN ATTACKED BY SYSTEM, IMPACT WOULD BE MOST EFFECTIVE MILITARILY. THE INDIVIDUAL TARGETS SELECTED WERE PLACED IN MATRIX FORMAT FOR FINAL SCREENING; THE MATRIX IS TOO COMPLEX TO SHOW IN ITS ENTIRETY, THEREFORE WAS MODIFIED TO ILLUSTRATE: THE 3-STEP ANALYSIS WHICH PRECEDED TARGET SELECTION; THAT TARGETS SELECTED FALL INTO ONLY 6 OF THE 10 GROUPS, AND THE NUMBER OF TARGETS SELECTED IS 52.

FLIP 1

THESE ARE THE TARGET GROUPS WHICH NEED NOT BE ATTACKED. AFTER A BRIEF REITERATION OF WHY THESE 4 TARGET GROUPS WERE OMITTED, THE 52 TARGETS SELECTED WILL BE ADDRESSED BY SYSTEM TO
OUTLINE THE AIR CAMPAIGN.

**EXTRACTIVE**: ONLY COAL IS AN IMPORTANT ELEMENT OF THIS TARGET GROUP. MINES ARE NOT A SUITABLE TARGET FOR DIRECT ATTACK. THE MAJOR CONTRIBUTION COAL PROVIDES TO THE ECONOMY SHOULD BE NEUTRALIZED THROUGH ATTACK ON END USE FACILITIES SUCH AS FIXED THERMAL POWER PLANTS AND KEY INDUSTRY.

**LOCKS & DAMS**: ANALYSIS REVEALED THAT ATTACKING LOCKS & DAMS LOCATED IN RPs V AND VI WOULD, BY COMPARISON, BE COSTLY IN SORTIES FOR RESULTS ACHIEVED. THIS IS NOT TO SAY THAT CIRCUMSTANCES MAY ALTER THIS POSITION IN AN ENSUING EVALUATION.

**POL**: IS NOT A SUITABLE TARGET FOR AIR ATTACK IN A DISPERSED STATUS. ATTACK ON POL SHOULD BE ACCOMPLISHED INDIRECTLY BY DIRECT ATTACK ON IMPORT FACILITIES AND METHODS.

**MILITARY**: TARGETS IN THIS GROUP SHOWED A LOW ORDER OF INTERRELATIONSHIPS WHEN ANALYZED USING THE ECONOMETRIC MATRACES. ALTHOUGH THERE ARE MANY PROFITABLE TARGETS IN THIS GROUP, MOST ARE SMALL AND WELL DISPERSED, REQUIRING EXCESSIVE SORTIE COMMITMENT FOR DIRECT ATTACK. THIS TARGET GROUP CAN BE MOST EFFECTIVELY ATTACKED INDIRECTLY, THROUGH IMPORT DENIAL.

IN SUMMARY, AN EFFECTIVE AIR CAMPAIGN NEED NOT INCLUDE TARGETS REQUIRING EXCESSIVE SORTIE COMMITMENT WITH LOW PRODUCTIVITY UNLESS NEUTRALIZATION OF THE TARGET SYSTEM BY DIRECT ATTACK IS
MANDATORY. DIRECT ATTACK ON THE 52 TARGETS IN THE SIX GROUPS SELECTED WILL HAVE SUFFICIENT COLLATERAL EFFECT ON TARGETS IN THE 4 GROUPS OMMITTED. THIS WILL BE EVIDENT IN THE DISCUSSION OF THE AIR CAMPAIGN WHICH FOLLOWS.

SLIDE 20

AIR CAMPAIGN

THE 52 TARGETS RECOMMENDED FOR THE AIR CAMPAIGN WILL NOW BE REVIEWED BY SYSTEM. FOLLOWING THE DISCUSSION BY SYSTEM ALL TARGETS WILL BE SHOWN ON A SINGLE SLIDE. INCLUDED IN THE DISCUSSION OF EACH SYSTEM WILL BE SORTIES REQUIRED TO STRIKE EACH TARGET BASED ON WEAPONEERING DATA CONTAINED IN THE DIA PHYSICAL VULNERABILITY HANDBOOK. WITH THE EXCEPTION OF AIRFIELDS AND BRIDGES, WEAPONEERING DATA WAS APPLIED TO ACHIEVE A 50% PROBABILITY OF 70% DAMAGE LEVEL USING A 200 FOOT CEP AND SIX 750 LB BOMBS ON EACH SORTIE. RECENTLY, THERE HAS BEEN CONSIDERABLE DISCUSSION REGARDING VALIDITY OF WEAPONEERING UNDER THESE PARAMETERS. OBVIOUSLY IN COMBAT THESE VALUES WILL VARY WITH THE CIRCUMSTANCES OF APPLICATION. SOME TARGETS, BY VIRTUE OF SIZE AND LOCATION, CANNOT EASILY BE CAMOUFLAGED AND THEREFORE CAN BE ACQUIRED AND ATTACKED WITH GREATER ACCURACY. EXAMPLES OF THIS ON BOTH ENDS OF THE SPECTRUM MIGHT BE THE HANOI POL STORAGE AND POL DISPERSED IN 50 GALLON DRUMS IN THE JUNGLE. WITH THIS COMPARISON, IT IS BELIEVED THE WEAPONEERING USED FOR PLANNING IS
ACCEPTABLE, PARTICULARLY FOR THE 52 TARGETS RECOMMENDED. THE MINOR DIFFERENCE IN AIRFIELD AND BRIDGE WEAPONEERING WILL BE DEFINED WHEN THOSE TARGET GROUPS ARE DISCUSSED.

SLIDE 21

COMMAND AND CONTROL

THIS IS THE COMMAND AND CONTROL TARGET SYSTEM COMPRISED OF 8 TARGETS WHICH ARE LISTED IN COLUMN 1. DESTRUCTION OF THESE TARGETS WILL HAVE THE MOST FAR-REACHING COLLATERAL EFFECTS ON ASSOCIATED COMMAND AND CONTROL TARGETS, WITH THE GREATEST ECONOMY IN SORTIES AND AIRCRAFT ATTRITION.

FLIP 1

THIS COLUMN SHOWS THE SORTIE REQUIREMENT PER TARGET.

FLIP 2

SHOWS THE DIRECT EFFECT EXPECTED FROM ATTACK ON THIS TARGET SYSTEM.

FLIP 3

SHOWS THE TOTAL SORTIE REQUIREMENT TO ATTACK THIS SYSTEM AND THE EXPECTED AIRCRAFT ATTRITION BASED ON USAF EXPERIENCE IN RPS V AND VI, APRIL 1966 THROUGH APRIL 1967.

FLIP 4

THE "COLLATERAL EFFECTS" COLUMN ON THIS SLIDE, AND OTHERS TO FOLLOW, WILL SHOW RELATED TARGETS AND TARGET SYSTEMS Whose OPERATIONAL EFFICIENCY WILL BE COMPROMISED, REDUCED, OR DEGRADED
THROUGH ATTACKS ON THE PRIMARY TARGET SYSTEM. CIVILIAN CASUALTIES EXPECTED FROM ATTACKING EACH TARGET SYSTEM WILL ALSO BE SHOWN. TO WHAT DEGREE THIS COLLATERAL EFFECT WOULD DEGRADE THE TOTAL COMMAND AND CONTROL SYSTEM CANNOT ACCURATELY BE DETERMINED. AN OBVIOUS GENERAL EFFECT WOULD BE A DECREASE IN THE VULNERABILITY OF U.S. FORCES ATTACKING TARGETS IN NVN. HOWEVER, ATTACKS ON THE PRIMARY TARGETS RECOMMENDED WILL RESULT IN THE MOST EFFECTIVE OVERALL REDUCTION IN THE DEFENSIVE CAPABILITY WHICH PRESENTLY EXISTS IN NVN. IF OBJECTIVES CAN BE ACHIEVED BY ATTACKING PRIMARY TARGET SYSTEMS; IN A SHORTER TIME PERIOD, WITH FEWER SORTIES, FEWER LOSSES AND FEWER CIVILIAN CASUALTIES, AND THEREFORE WITH GREATER COST EFFECTIVENESS, DIRECT ATTACKS AGAINST THE COLLATERAL GROUP BECOME UNNECESSARY. TWO OF THESE TARGETS, THE INTERNATIONAL TRANSMITTER AND RECEIVER STATIONS, ALTHOUGH VALID TARGETS, PROVIDE A SOURCE OF INTELLIGENCE USEFUL TO THE U.S.; THEREFORE, THIS ASPECT SHOULD BE FULLY CONSIDERED PRIOR TO ATTACKING THESE TARGETS. ADDITIONALLY, AT THIS TIME THERE IS NOT SUFFICIENT POSITIONAL DATA ON THE LISTED FILTER CENTERS TO PERMIT TARGETING.

SLIDE 22

AIRFIELD TARGET GROUP

THIS IS THE AIRFIELD TARGET SYSTEM DATA. AIRFIELD WEAPONEERING WAS DONE TO ACHIEVE A 50% PROBABILITY OF: 75% DAMAGE LEVEL TO
AIRCRAFT; 50% DAMAGE LEVEL TO RUNWAYS; AND A 30% DAMAGE LEVEL TO HANGARS AND FACILITIES. WEAPONEERING CONSIDERED A 200 FT CEP AND A MIX OF 750 LB BOMBS AND CBU 24s. KIEN AN, KEP AND HOA LAC, SHOWN IN RED HAVE BEEN STRUCK.

ATTACKS AGAINST AIRFIELDS WOULD NOT DIRECTLY AFFECT THE CAPABILITY OF NVN TO CONTINUE SUPPORT OF HOSTILITIES IN SVN. HOWEVER, EFFICIENCY OF U.S. AIR OPERATIONS IN RPs V AND VI WOULD BE INCREASED BY REDUCING THE MIG THREAT. THE REQUIREMENT FOR MIG CAP SORTIES AND DEFENSIVE JETTISON OF ORDNANCE AS WELL AS ATTRITION OF STRIKE AIRCRAFT COULD BE REDUCED. THE USE OF AIRFIELDS IN COMMUNIST CHINA IS A POSSIBILITY WHICH IS ANTICIPATED BUT THE ON STATION TIME OF DEFENSIVE AIRCRAFT WOULD BE LIMITED.

SLIDE 23

PORTS

THIS IS THE TARGETING DATA ON PORTS. WHILE THIRTEEN MARITIME PORTS HAVE BEEN IDENTIFIED IN NVN, SIGNIFICANT IMPORT/EXPORT ACTIVITY IS CARRIED ON AT HAIPHONG, HON GAI AND CAM PHA. THESE ARE THE ONLY NVN PORTS WHICH CAN ACCOMMODATE OCEAN GOING SHIPS. OTHER PORTS MUST EMPLOY LIGHTERING SYSTEMS OR RECEIVE MATERIEL FROM SMALL COASTAL CRAFT. HAIPHONG IS USED PRIMARILY FOR IMPORTS, WHILE CAM PHA AND HON GAI ARE DEVOTED PRIMARILY TO THE EXPORT OF COAL. HAIPHONG HANDLES 80% OF ALL MARITIME SHIPPING AND 95% OF ALL POL IMPORTS.
THE STUDY RECOMMENDS BOTH ASPECTS OF PORT DENIAL: THE DESTRUCTION OF PORT FACILITIES, AND PORT ISOLATION THROUGH MINING OPERATIONS.

PORT DESTRUCTION WOULD GREATLY REDUCE PORT ACCOMMODATION RATES BUT WOULD NOT PRECLUDE VESSELS ANCHORING WITHIN THE PORT AREA AND OFF-LOADING INTO LIGHTERS OR BARGES. MINING WOULD NOT PREVENT USE OF THE SAME OFF-LOADING METHODS BUT WOULD FORCE SHIPPING TO REMAIN OFF THE COAST IN UNSHelterED WATERS AND RESTRICT OPERATIONS TO PERIODS OF RELATIVELY CALM SEAS. SMALLER VESSELS WOULD THEN HAVE TO AVOID MINED AREAS AND WOULD BE SUSCEPTIBLE TO ATTACK ENROUTE TO THEIR OFF-LOADING POINTS.

THE RESULT OF ATTACKS ON PORT FACILITIES WILL DIFFER SIGNIFICANTLY FROM ATTACKS ON OTHER TARGET SYSTEMS BECAUSE THE ENEMY CANNOT ACCOMMODATE TO DENIAL OF MATERIAL ESSENTIAL TO MILITARY OPERATIONS. IF SAMS AND AMMUNITION ARE NOT IMPORTED, THE ENEMY CANNOT COMPENSATE FOR A DEGRADED DEFENSE SYSTEM. IF TRUCKS AND TRUCK PARTS ARE NOT IMPORTED, EFFICIENCY OF MILITARY RESUPPLY AND TRANSPORT REQUIREMENTS ARE GRADUALLY LOWERED TO THE POINT OF NON-RECOVERABILITY. DENIAL OF POL WOULD BE PARALYZING.

NEUTRALIZATION OF PORT FACILITIES, TOGETHER WITH SOLID INTERDICTION OF THE N.E. AND N.W. LOC SYSTEMS, WILL COMPLEMENT EFFECTS OF STRIKING OTHER TARGET SYSTEMS IN NVN. ATTACKING THE PORT TARGET SYSTEM WILL NEUTRALIZE OTHER TARGET SYSTEMS WITHOUT DIRECT ATTACK.
ELECTRICAL POWER

This electrical power target system is comprised of 11 fixed power plants and one transformer station. The seven thermal plants and the transformer station which are indicated in red were authorized for strikes in Rolling Thunder 54, 55 and 56. Six of these plants were on the national grid and the seventh, Bac Giang, was in the process of being connected to the grid. During the initial phases of the study none of these plants were authorized for strike. However, on 22 February, four of the plants, three of which were on the national grid, were authorized for strike. Subsequently two more plants on the grid were authorized for strike as part of Rolling Thunder 54. While those five plants represented 46.6% of the national capacity and 64.9% of the grid capacity, their destruction did not have a decisive impact on NVN capabilities because it was possible to redistribute residual power throughout the grid. This illustrates the point that piecemeal targeting will not impact as decisively as total system targeting. With the destruction of the Hanoi power plant and transformer station, as part of Rolling Thunder 55 and 56, an immediate effect on the national economy should follow. This would result as NVN industry consumes approximately 90% of national power capacity and it is estimated 60%/75% of North Vietnam's industry would be idled through this loss of power. This could
PRECLUDE THE NECESSITY FOR DIRECT ATTACKS ON INDUSTRIAL TARGETS. THERE IS NO EVIDENCE THAT THE LAST FOUR POWER PLANTS LISTED ON THE SLIDE ARE TIED INTO THE NATIONAL GRID; THEREFORE, AT THIS TIME THEY ARE OF SIGNIFICANCE ONLY IN RELATION TO LOCAL OR ADJACENT INDUSTRY. HOWEVER, THEY ARE IDENTIFIED WITH THE ELECTRICAL POWER TARGET SYSTEM SINCE THEIR COMBINED OUTPUT (AFTER DESTRUCTION OF THE SEVEN PLANTS ABOVE) IS 45% OF THE REMAINING NVN CAPACITY.

BECAUSE OF THE VULNERABILITY OF FIXED ELECTRICAL POWER PLANTS, THE ENEMY IS DEVELOPING ALTERNATIVE SOURCES OF POWER TO SERVE SPECIFIC CONSUMERS. THESE CONSIST OF SMALL HYDRO ELECTRIC STATIONS PLUS PORTABLE DIESEL AND STEAM POWER PLANTS WHICH ARE IMPORTED. DISPERSED FACILITIES SUCH AS THESE CAN BE ASSEMBLED IN A RELATIVELY SHORT TIME AND ARE A MEANS OF REDUCING SYSTEM VULNERABILITIES SUCH AS HAS BEEN THE CASE WITH DISPERSED POL. SIMILARLY, DISPERSED PORTABLE ELECTRIC POWER UNITS, PETROLEUM DRIVEN, ARE NOT SUITABLE FOR ATTACK BY AIR. THIS SOURCE OF POWER MUST BE DENIED THE ENEMY BY THE DENIAL OF POL (RESULTING FROM ATTACKS ON PORT FACILITIES). THE NVN FIXED ELECTRIC POWER BASE, THEREFORE, IS BECOMING INCREASINGLY TIME SENSITIVE TO ATTACK.

SLIDE 25

INDUSTRIAL

THIS SLIDE SHOWS TARGET DATA FOR 9 TARGETS IN THE INDUSTRIAL TARGET GROUP. THE THAI NGUYEN IRON AND STEEL PLANT, AND THE HAIPHONG
CEMENT PLANT, SHOWN IN RED, WERE INCLUDED IN RT 54 AND 55 AND HAVE BEEN ATTACKED. THE ECONOMETRIC STUDY CONSIDERED THESE TWO TARGETS -- THE THAI NGUYEN IRON AND STEEL, AND THE HAIPHONG CEMENT PLANT -- SIGNIFICANTLY MORE IMPORTANT THAN THE OTHERS BECAUSE THEIR PRODUCTION CONTRIBUTES MORE DIRECTLY TO THE NVN MILITARY CAPABILITY.

THE HANOI MACHINE TOOL PLANT IS ALSO IMPORTANT, BUT TO A LESSER DEGREE, FOR PRODUCTION OF AUTOMOTIVE PARTS, AGRICULTURAL PUMPS, AND LIMITED QUANTITIES OF MACHINE TOOLS FOR INTERNAL USE. ALTHOUGH THERE IS NO INDICATION THE PLANT IS PRODUCING WEAPONS, IT HAS A POTENTIAL FOR CONVERSION, ON A LIMITED SCALE, TO THE PRODUCTION OF SMALL ARMS. THE NAM DINH TEXTILE PLANT HAS SUFFERED COLLATERAL DAMAGE, AS A RESULT OF STRIKES AGAINST COLLOCATED TARGETS, WHICH HAS PROBABLY REDUCED ITS PRESENT VALUE AS A TARGET FOR AIR STRIKE.

THE FOUR CHEMICAL PLANTS LISTED PROBABLY DO NOT CONTRIBUTE DIRECTLY TO WAR SUPPORTING PRODUCTION AND OUTPUT FROM THESE FACILITIES CAN BE HALTED OR AT LEAST REDUCED BY ELIMINATION OF EXTERNALLY PROVIDED ELECTRICAL POWER. THEY ARE, HOWEVER, IMPORTANT TO THE INDUSTRIAL TARGET SYSTEM; TO THE TOTAL TARGET BASE; AND TO ACHIEVEMENT OF THE OBJECTIVE OF REDUCING THE FLOW OF SUPPLIES TO SVN FOR THE FOLLOWING REASONS:

a. APPROXIMATELY ONE FOURTH OF ANNUAL SEABORNE IMPORTS IN 1966 (224,000 METRIC TONS) WERE REPORTED TO BE FERTILIZERS TO
AUGMENT FERTILIZER PRODUCTION OF THREE OF THESE PLANTS WHICH PRODUCED 325,000 METRIC TONS OR APPROXIMATELY 50% MORE THAN THE 1966 LEVEL OF FERTILIZER IMPORTATION.

b. NEUTRALIZATION OF THESE PLANTS WILL REQUIRE AN INCREASE IN FERTILIZER IMPORT AND PERHAPS FORCE THE NVN TO CHOOSE BETWEEN IMPORTING ITEMS FOR SUBSISTENCE OR AGGRESSION. AT A MINIMUM, IMPORT FACILITIES WOULD BE FORCED TO ACCOMMODATE THE INCREASED REQUIREMENT.

c. THESE PLANTS NORMALLY RELY ON FIXED ELECTRICAL POWER AND ARE CURRENTLY BEING REPORTED BY INTELLIGENCE AS INOPERABLE AS A RESULT OF THE NEUTRALIZATION OF THE ELECTRICAL POWER GRID. IF NVN DEVISES A METHOD TO PROVIDE POWER TO THESE PLANTS, DIRECT ATTACK WOULD BE DESIRED TO MAINTAIN THE REQUIREMENT FOR INCREASED FERTILIZER IMPORTS.

SLIDE 26 TRANSPORTATION (LOCs)

THIS SLIDE SHOWS TARGETING DATA FOR INTERDICTION OF THE LOC SYSTEM IN ROUTE PACKAGES 5 AND 6. THE BRIDGES HAVE BEEN WEAPONEERED FOR A 70% PROBABILITY OF DROPPING ONE SPAN. RESTRIKES ON BRIDGES ARE SCHEDULED IN SEVEN DAYS; WATERWAYS REQUIRE RE-SEEDING EACH TEN DAYS.

IN 1966, 25% OF ENEMY IMPORTS WERE CARRIED ON THESE LOCs. PORT DENIAL IS EXPECTED TO BE COUNTERED WITH AN ATTEMPT TO INCREASE TONNAGES NOW CARRIED. COMPREHENSIVE INTERDICTION OF THESE 32
NORTHERN LOCs BECOMES ESSENTIAL TO COMPLEMENT AND EXPLOIT PORT
DENIAL. INTERDICTION WILL MAGNIFY ENEMY DIFFICULTIES, REDUCE LOC
CAPACITY, IMPOSE ADDITIONAL STRAIN ON TRUCK AND RAILROAD ROLLING
STOCK WHICH IS, IN THE FINAL ANALYSIS, THE FACTOR WHICH MOST
DIRECTLY LIMITS ENEMY SUPPLY AND RESUPPLY CAPABILITIES.

THE INTERDICTION PROGRAM RECOMMENDED WAS SELECTED ON THE BASIS
OF THE RESULTS PREDICTED BY THE NVN LOC COMPUTER MODEL. TO SUP-
PORT THIS PROGRAM, THE MODEL WAS MODIFIED TO SELECT A SERIES OF
INTERDICTIONS IN THE NORTHERN SECTOR OF ROUTE PACKAGES 5 AND 6
OUTSIDE OF RESTRICTED AREAS. TARGETS SELECTED WOULD ACHIEVE
MAXIMUM REDUCTION IN FLOW, WITH MINIMUM NUMBER OF INTERDICTIONS
AND LOWEST COST IN SORTIES AND AIRCRAFT ATTRITION (OVER A 60-DAY
PERIOD). THE COMPUTER DEVELOPED INTERDICTION PROGRAM MAY REQUIRE
AN INCREASED NUMBER OF TARGETS TO TAKE INTO ACCOUNT THE ENEMY'S
DEMONSTRATED EFFICIENCY IN LOC REPAIR. A SOUND APPROACH TO
STRIKES AGAINST THIS TARGET GROUP IS CONTAINED IN CINCPAC'S 1966
CONCEPTS, WHICH STATES A REQUIREMENT FOR "MAINTAINING IN A STATE
OF DESTRUCTION AT LEAST TWO KEY BRIDGES ON THE NE AND NW RAIL LINES
AND INTERDICTION OF OTHER ROUTES AS THE OPERATIONAL FACTORS AND
INTELLIGENCE DICTATE." ADDITIONAL TARGETS REQUIRED TO MEET THIS
OBJECTIVE SHOULD BE SELECTED BY CINCPAC.

SLIDE 27 RECOMMENDED CAMPAIGN SUMMARY

THIS SLIDE PRESENTS A SUMMARY OF TARGETS, SORTIES, ATTRITION
AND CIVILIAN CASUALTIES JUST DISCUSSED. TOTAL SORTIES SHOWN ARE REQUIRED TO ACHIEVE INITIAL DAMAGE LEVEL PROBABILITIES PREVIOUSLY DISCUSSED AND DO NOT INCLUDE SUPPORTING SORTIES. IT IS OBVIOUS THIS RECOMMENDED CAMPAIGN WOULD ADVERSELY AFFECT, ON AN EVER INCREASING ORDER OF MAGNITUDE, THE DEMONSTRATED ABILITY OF THE NORTH VIETNAMESE TO RECUPERATE FROM AND ACCOMMODATE TO U.S. AIR EFFORTS. TO BRIEFLY SUMMARIZE SORTIE REQUIREMENTS VERSUS AVAILABILITY; THE FIRST PART OF ISIP ALLOCATED APPROXIMATELY 1,000 SORTIES EACH MONTH FOR STRIKES IN RPs V AND VI. FLEXIBILITY IN THE ISIP CONCEPT WILL PROVIDE FOR INCREASING THE 1,000 SORTIES TO APPROXIMATELY 2,000 EACH MONTH, PARTICULARLY WHEN THE WEATHER IMPROVES IN RPs V AND VI AND WORSENS IN LAOS. EMPLOYMENT OF THIS WEIGHT OF EFFORT FOR A 4 TO 6 MONTH PERIOD AGAINST THE RECOMMENDED TARGET BASE WOULD IMPACT MORE DECISIVELY THAN ROLLING THUNDER PROGRAMS AUTHORIZED TO DATE.

SLIDE 27A RESTRIKE REQUIREMENTS

THE JCS TARGET STUDY OF NVN (JCS 2343/383-2) WHICH PROVIDES RECUPERABILITY ESTIMATES FOR EACH JCS NUMBERED TARGET HAS BEEN USED AS THE SOURCE DOCUMENT IN PLANNING RESTRIKE REQUIREMENTS ON NVN FIXED TARGETS. THE ACCURACY OF THE REPRESENTATIVE REPAIR ESTIMATES IS SENSITIVE TO THE ASSUMPTION THAT THE MEANS FOR REPAIR ARE AVAIL-
ABLE AND THAT THERE IS AN ENEMY REQUIREMENT FOR REPAIR. IF A 70% DAMAGE LEVEL IS ACHIEVED ON INITIAL STRIKES, RESTRIKE TIMING AND SORTIE REQUIREMENTS FOR EACH FIXED TARGET SYSTEM SHOULD BE AS SHOWN ON THIS SLIDE.

THE SORTIE REQUIREMENT FOR EACH SYSTEM IS THE SAME AS IT WAS FOR INITIAL STRIKES AND ASSUMES THAT RECONSTITUTION WOULD OCCUR AT THE ORIGINAL LOCATION WITH FACILITIES RESTORED TO FULL CAPACITY. IN THE CASE OF PORTS, SORTIE REQUIREMENTS COULD INCREASE CONSIDERABLY TO COPE WITH OVER THE BEACH DISCHARGE.

REPAIR TIMES FOR THE RAILROAD AND HIGHWAY BRIDGES ARE MORE RAPID THAN SHOWN IN THE JCS TARGET STUDY BUT ARE REGARDED AS MORE CONSISTENT WITH THE ACTUAL SITUATION IN NVN TODAY. THE TIME, SEVEN DAYS FOR BRIDGE REPAIR TAKES COGNIZANCE OF THE ENEMY'S DEMONSTRATED PROFICIENCY AND DETERMINATION IN BRIDGE REPAIR, PONTOON BRIDGE AND BYPASS CONSTRUCTION.

SLIDE 27A  FLIP 1

USING THE ABOVE DATA AS A PLANNING BASE, APPROXIMATELY 1,200 SORTIES PER MONTH WOULD BE REQUIRED TO PREVENT FIXED TARGET SYSTEM RECUPERABILITY AND 1,450 SORTIES PER MONTH FOR LOC RESTRIKES. ACTUAL RESTRIKE SORTIE REQUIREMENTS COULD BE LESS THAN SHOWN ON
FIXED TARGETS, since the enemy must import the necessary machinery and materiel for the repair of these targets. Further, where the materiel is available, the enemy must consider the futility of repairing a facility which will probably be restruck as soon as work is completed. Additionally, repair estimates do not consider the use of area denial munitions and land mines with variable time delay fuzes. Their use could extend repair times substantially.

Apparent is the fact that over half of the sorties required are devoted to LOC restrikes. All factors considered, such as defenses, attrition, LOC repair capability and adverse weather, this heavy sortie investment for LOC interdiction points out that without port denial and continued strikes on other important fixed targets to complement this effort, an air campaign directed only to LOCs in RPs V and VI becomes a relatively uneconomic application of air power on a continuous basis.

There is no actual experience pattern for repair of major fixed targets in NVN as such repair will depend upon factors enumerated above. Restrike requirements, therefore, must be a function of enemy reactions determined through visual and photo reconnaissance, political information, and covert intelligence.

The next slide will show a complete target listing.
SLIDE 48

TARGET LIST COMPARISON

Here is a collective list of the 52 recommended targets for the air campaign. As indicated by the color code key in the top left corner, this slide will also show, when the flip is lifted, commonality between target lists prepared recently by the JCS, CINCPAC, the Air Staff, and this study. Application of the color code in the top right corner will reveal those targets categorized as JCS Rolling Thunder proposed, those with a JCS execute order and those actually struck.

FLIP 1

The significance of this comparison is the unanimity.* As indicated earlier in the briefing, the econometric analysis validates previous target list recommendations. The validation, however, is a step beyond military judgments based wholly on experience. The analysis re-enforces these military judgements by fact and supporting interrelationships.

Before going to conclusions and recommendations, let us examine U.S. national objectives in North Vietnam in light of present and past air efforts.

*Only one of 8 highway bridges appears on the CINCPAC and Air Staff lists.
these objectives were restated recently by the secretary of defense and chairman of the joint chiefs. to achieve the third objective, a substantial reduction in availability of materials which support the enemy operation in both nvn and svn is required. this briefing and its interdiction counterpart has outlined a systematic concept that increases effectiveness, and therefore impact, on the flow of material, the economy, and in all probability, the will of nvn.

the current fragmented pattern of air power employment in rps v and vi, although recently increased in tempo and conviction by attacks on more significant targets, has not produced conclusive indication of achieving the third objective. the current air campaign is evidently having some definite but unmeasured success. this is indicated by the fact that intelligence estimates continue to reveal a consistent increase of imports. on the other hand, the enemy has demonstrated an adroitness in accommodating to plans based on gradual increase of military pressures with predictable limits. it thus becomes increasingly apparent that the sea conflict has reached the point where definite advancement toward achievement of objective three can result only from actions which do not fit into the category of a gradual pressure increase. to delay the
DECISION FOR THESE ESSENTIAL ACTIONS WILL PROLONG THE STALEMATED AIR CAMPAIGN, POSSIBLY TO THE EXTENT THAT THERE WILL NOT BE SUFFICIENT TIME REMAINING TO EXPLOIT FULLY THE IMPROVED WEATHER PERIOD WHICH OCCURS ANNUALLY APRIL THROUGH OCTOBER. IN THIS EVENT, SUCCESSFUL CONCLUSION OF THE SEA CONFLICT IN 1967 BECOMES DOUBTFUL.