APPENDIX B:

The Institute's Phase I and II Results An Assessment of the U.S. Telecommunications Industry Dependence on Foreign Sources as it Impacts the U.S. Telecommunications Infrastructure

By: David F. Peach and Michael D. Meister

U.S. Department of Commerce
National Telecommunications and Information Administration
Institute for Telecommunications Sciences
325 Broadway
Boulder, CO 80303

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By David F. Peach P.E. and Michael D. Meister

Institute for Telecommunication Sciences
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EXECUTIVE SUMMARY

The National Security and Emergency Preparedness (NS/EP) of the country depends on the capability of the telecommunications infrastructure to respond to a demand for mobilization. Mobilization is defined as the process of sustaining operation and/or the rapid implementation of an increase in capacity of the Government telecommunication infrastructure. The Federal mobilization preparedness policy is defined in "The Prototype National Option Plan for Graduated Mobilization Response (GMR)[1]," a report published by the Federal Emergency Management Agency (FEMA). In response to the FEMA report, the Joint Industry-Government Telecommunications Industry Mobilization (TIM) Group examined and reported the dependence of the U.S. Telecommunications Industry on other infrastructure systems[2]. Nine infrastructure systems were identified as areas of vulnerability:

- Energy
- Transportation
- Direct and Indirect Support Services to Operating Personnel
- Financial Services
- Government Services
- Local Services
- Mass-Media Communication
- Manufacturing
- Security

The TIMs Study performed a detailed analysis of three of these infrastructures; Energy, Transportation, and Mass-Media Communications. During mobilization, these infrastructures were deemed to be the most critically dependent for Industry.

This study will concentrate on the availability of equipment required for executing the mobilization process. The requirement could include the need to build more capacity, to maintain the availability of spare parts, or to replace equipment destroyed by disaster or hostile action. These requirements will increase the demand for system configured equipment and for components to be used for spare parts or manufacture of equipment.

The study will be completed in three phases:

Phase I -- Systems Level Analysis

Phase II -- Component Level Analysis

Phase III - Identification and Prioritization of Vulnerabilities

Phase I -- Systems Level Analysis. Each major telecommunications system or group of systems will be analyzed to determine the amount of production within the U.S., the imported quantities, the exported quantities, and the U.S. consumption. When significant portions of the U.S. consumption come from foreign sources, that case will be flagged as a possible problem area. An attempt will be made to isolate specific equipment types from the groupings to identify individual equipments that come primarily (e.g., greater than 50%) from foreign sources.

Phase II -- Component Level Analysis. The focus of this effort will be to identify specific components that come primarily from foreign sources. Systems identified in Phase I will obviously use many of these components, however many of the target components will be used in systems manufactured in the U.S.

Phase III -- Identification and Prioritization of Vulnerabilities. After the vulnerabilities have been identified, solutions will be developed to cover the vulnerabilities, as required.

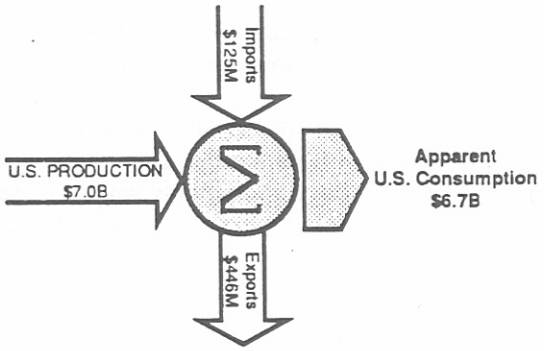
PRELIMINARY ANALYSIS OF AVAILABLE DATA

Based upon data received from the Department of Commerce (DoC) and the Bureau of Census, several systems level equipment groupings have been formulated to provide a preliminary "quick look" at the systems level problem. The data will be presented in pictorial format to succinctly illustrate the availability of U.S. production to cover the need in that category if a mobilization response would be required. The following formula will be used to calculate the baseline for the analysis; the Apparent U.S. Consumption.

U.S. Production + Imports - Exports = Apparent U.S. Consumption

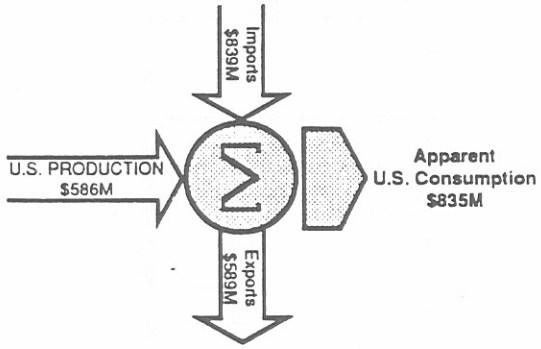
The value of "Imports" as a per cent of "Apparent U.S. Consumption" defines how much we rely on Foreign Sources for that category of equipment. The following is a "quick look" at some of the categories of equipment that is a part of the U.S. telecommunications infrastructure. The analysis begins with the data on Telephone Switching and Switchboard Equipment.

1. TELEPHONE SWITCHING and SWITCHBOARD EQUIPMENT...



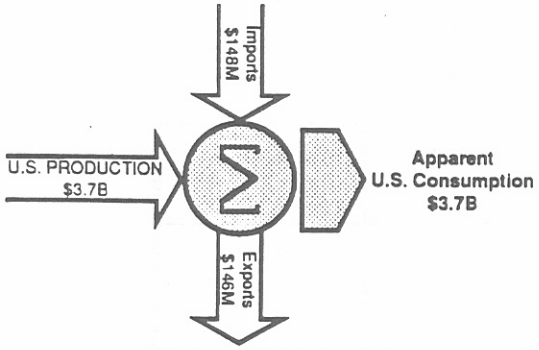
The category, Telephone Switching and Switchboard Equipment, is not vulnerable because the U.S. Production is more than enough to satisfy the Apparent U.S. Consumption. However the next category shows a possible problem area.

2. PARTS, COMPONENTS, and SUBASSEMBLIES for other TELEPHONE and TELEGRAPH APPARATUS, including SWITCHING and SWITCHBOARD APPARATUS...



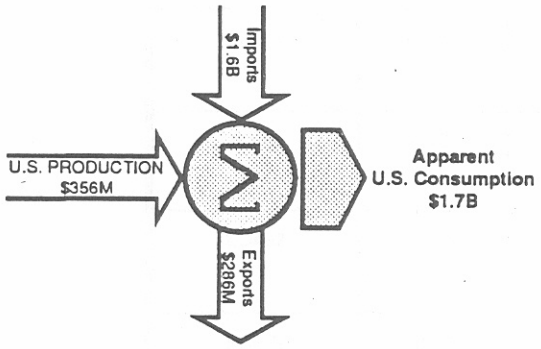
The U.S. Consumption is significantly more than the U.S. Production. One or more of the components included in this category is obtained from foreign sources.

3. CARRIER LINE EQUIPMENT...



The analysis of the this category (Carrier Line Equipment) illustrates an area where there is minimal vulnerability because the U.S. production is sufficient to satisfy the U.S. consumption and the value of imports is low.

4. TELEPHONE SETS including CORDLESS HANDSET TELEPHONES...



This category is an area of major vulnerability; the U.S. production is only 21 percent of the U.S. consumption requirement, and the import value is a large portion of the consumption--96 percent.

The data obtained on the remaining groups, analyzed so far, will be presented in table format. Some of the categories are not directly related to the telecommunications business, however, as the study progresses may be of value in the later phases of the study.

CATEGORY	U.S. PRODUCTION	IMPORTS	EXPORTS	U.S. CONSUMPTION
5. Modems...	$1.1B	$144M	$248M	$1.0B
6. Other telephone and telegraph equipment including voice frequency equipment...	$1.6B	$255M	NA	NA
7. Telephone key sets...	$344M	$44M	$126M	$262M
8. Telephone answering devices...	$34M	$367M	$40M	$361M
9. Facsimile communications equipment...	$196M	$1.0B	NA	$1.2B
10. Transmitter, receivers, RF power amps, radio communications, except amateur and citizens radio...	$1.9B	$75M	$269M	$1.7B
11. Audio amps and preamps, except consumer and PA types...	$177M	$11M	$13M	$175M
12. TV transmitters...	$40M	$97M	NA	$137M
13. Space satellite communications systems...	$2.5B	$132M	$47M	$2.6B
14. Mobile radio systems, base stations, and mobile vehicular transmit and receive packages...	$2.9B	$948M	$441M	$3.4B
15. Transceivers, portable receivers, transmitter and receivers except amateur and citizen band, and pagers, one-way...	$1.4B	$251M	$115M	$1.5B
16. Subassemblies and parts for mobile, portable and base stations radios...	$195M	$327M	$960M	NA
17. CB transceivers, hand-held and other...	(D)	$110M	$23M	NA
18. Antenna systems, including broadcast and community antennae systems...	$527M	$192M	$383M	$337M
19. Cable TV and closed circuit TV systems and equipment including AM and FM transmitters...	$649M	$487M	$88M	$1.0B
20. Intercommunications systems, including inductive paging systems (selective calling)...	$397M	$18M	$8M	$408M
21. Intrusion detection alarms systems...	$799M	$71M	$28M	$847M
22. Ionizing heat and smoke alarms systems...	$143M	$16M	$12M	$147M

REFERENCES

1. The Prototype National Option Plan for Graduated Mobilization Response (GMR), FEMA TR-5699-3, Office of Mobilization Preparedness, 500 C Street, S.W., Washington, DC, 1989.

2. Joint Industry-Government Telecommunications Industry Mobilization (TIM) Group, NCS 1588/1, April 1989.