AIR FORCE CAMBRIDGE RESEARCH LABORATORIES (AFCRL)

AS A PART OF THE HANSCOM COMPLEX

The Hanscom AFB complex is the subject of the accompanying First National Bank of Boston's excellent monograph on the importance of this installation to the total New England Economy. As the fourth largest "business" in Massachusetts (fifteenth largest in the six state New England region), the economic impact of the base is impressive -- directly affecting business and academic communities through the medium of contracts, and local cities and towns via both employee payrolls and federal governmental assistance to schools. Impressive as the foregoing may be, one should not lose sight of the First National's closing statements wherein it is said that "often times decisions as to the location and budgeting of military bases are made on the basis of considerations which may be more political than economic". In light of this truth, it would appear that vigilance must become a way of life so that further erosion of the federal sector does not occur in Massachusetts.

This note is meant to supplement the monograph and highlight the uncertain future of the Air Force Cambridge Research Laboratories (AFCRL). Since November 1974 the continued existence of this research arm of the Hanscom complex has been hanging by a fine thread - first with a proposed transfer of a significant part of the unit to New Mexico and, most recently, with an impending restructuring and a major reduction in manpower. Either action would appear to herald the inevitable demise of this internationally recognized organization along with a devastating impact on the Massachusetts economy.

AFCRL, a tenant at Hanscom, has been overshadowed by the host organization, the Electronics Systems Division (ESD). In fact, AFCRL is independent of the ESD in the areas of programs and fiscal control.

The Laboratories are responsible for research and exploratory development in the geophysics and electronics disciplines. Because AFCRL is largely concerned with conceptual ideas, (as contrasted to the development of operational systems), a significant portion of its annual budgetary funds ($56 million, see Appendix I) flow to local small businesses and educational institutions where expertise, flexibility and fertile thinking are prime attributes. (See Appendix II)

For comparison purposes, Appendix III is presented as a composite condensation of relevant data in the monograph. The basically civilian flavor of AFCRL is quite evident from reviewing the numbers. 56% of AFCRL's personnel are college graduates, of whom more than one-half have completed graduate studies. The high educational levels of AFCRL's personnel command 24% higher average pay. Though small by comparison (less than one-fourth of the Hanscom work force), AFCRL has a local impact out of proportion to its limited population and budget. As a case in point - AFCRL provides 94% of the funds disbursed by Hanscom to educational institutions in Massachusetts.

AFCRL does not neglect the small business community. Of the $11.6 million in Hanscom funds channeled to local small business, more than one-third was generated in the Laboratories. In addition $1 million-plus research dollars were allocated to large businesses, as presented in Appendix II. Since its establishment in the mid forties, the Air Force Cambridge Research Laboratories have infused approximately $1 billion into the local economy.

AFCRL is a dynamic, experienced and highly competent organization. Attesting to this are the recent accolades originating in the Air Force and DOD Committees commissioned to investigate the effectiveness, relevance, productivity, etc. of AFCRL over the years. For example, two laboratories

working in the electronic disciplines, recently received Air Force Organizational Excellence Awards for outstanding achievements. Additionally, a prestigious Ad Hoc Committee appointed by Secretary of the Air Force, John L. McLucas, some months after the November 1974 announcement of a planned massive Air Force reposturing effort, reaffirmed earlier favorable studies of AFCRL. Chaired by Dean Courtland D. Perkins (Princeton School of Engineering, member and past Chairman of the Air Force Scientific Advisory Board, President of the National Academy of Engineers), this group was tasked to review the competence, uniqueness, contribution and organization of the AFCRL, as well as to assess the scientific and technical impact of transferring 600 designated AFCRL positions to New Mexico. The full committee held both executive and public sessions where testimony was received from invited experts. At the final public meeting Dean Perkins, in a broad assessment of AFCRL, stated, "Personally, I'm convinced there is a very high quality here, unique, which probably can't be found in any other part of the country. If it (AFCRL) disappeared, it would be the end of a great national asset". In his written submission to Secretary McLucas, the Chairman included the following comments:

> "..... The geophysics laboratories of AFCRL contribute significantly to Air Force missions and to the programs of other national agencies as well".
>
> "The geophysics laboratories of AFCRL are of high quality and provide a unique and useful competence to the Air Force and the country".

In Summary, plans exist for fragmenting and reducing the AFCRL research complex in the immediate future. It is believed that the days of AFCRL are numbered unless there is understanding at the highest decision making

levels of the impact of the demise of this facility on the future national defense posture, and of the economic impact at the state and local levels. Therefore, there is a present need for positive political and community support to save the facility and human resources for Massachusetts.

APPENDIX I (30 June 1974)

AFCRL FACT SHEET

PERSONNEL (Authorized as of 30 June 1974)	1059
Civilian	904
Military	155
BUDGET FOR FY-1974	$56,019,000
Contract Research	23,983,000
Salaries	23,408,553
Equipment and Operational Costs	8,627,447
SOURCES OF FY-1974 FUNDS	$56,019,000
Air Force Systems Command - DL	42,268,000
Defense Nuclear Agency	4,890,000
Advanced Research Projects Agency	3,850,000
Air Force Systems Command Other than DL	2,698,000
Air Weather Service	927,000
National Aeronautics and Space Administration	806,000
Army	92,000
Defense Mapping Agency	85,000
Atomic Energy Commission	259,000
Department of Transportation	48,000
Air Force Technical Applications Center	40,000
Defense Communications Agency	32,000
Navy	24,000
NUMBER OF CONTRACTS	370
Industry (U. S.)	149
University (U. S.)	130
Research Foundations and Other Government Agencies	63
Foreign Companies and Universities	28

APPENDIX II

Massachusetts Contracts From AFCRL

Educational Institutions

	FY74	FY75
Worcester Polytechnic Institute	$12,957	----
Boston College	1,266,000	$1,133,000
Boston University	31,000	45,000
Brandeis University	------	12,000
Emmanuel College	382,000	452,000
Harvard University	75,000	82,000
Lowell Technical Institute	144,000	83,000
MIT	993,000	1,012,000
Northeastern University	752,000	575,000
Regis College	268,000	227,000
Tufts University	200,000	175,000
Wentworth Institute	879,000	840,000
Total	$5,002,957	$4,636,000

Small Businesses

HSS Inc. (Bedford)	38,000	
Accumetrics (Cambridge)	61,000	$ 48,000
Aerodyne (Burlington)	52,000	43,000
Analysis and Comp. Syst. (Burlington)	57,000	229,000
Arcon (Wakefield)	168,000	236,000
Barkely and Dexter (Fitchburg)	71,000	109,000
Comstock and Wescott (Cambridge)	351,000	143,000
Digital Prog. Serv. Inc. (Waltham)	112,000	153,000
Env. Res. and Tech. (Lexington)	273,000	397,000
Epsilon Labs (Bedford)	155,000	97,000
Idealab (Franklin)	50,000	90,000
Manlabs (Cambridge)	80,000	95,000
Mt. Auburn Res. (Newton)	131,000	50,000
Panametrics (Waltham)	121,000	103,000
Parke Math. Labs (Carlisle)	42,000	74,000
Photometrics (Lexington)	164,000	184,000
RDP, Inc. (Bedford)	267,000	108,000
Tri-Con Associates (Cambridge)	92,000	136,000
Visidyne (Burlington)	401,000	180,000
Instrument Associates (Bedford)	55,000	34,000
CSI (Burlington)	-------	121,000
Proteon Associates (Waltham)	-------	71,000
Information Design (Bedford)	-------	20,000
Advanced Metals Research (Burlington)	-------	29,000
Wellesley Instrument (Waltham)	-------	20,000
Input/Output Computer Services (Cambridge)	114,000	-------
Excalibur Corp. (Waltham)	33,000	-------
Misc. Contracts (Less than $10K)	899,000	1,044,000
Total	$3,787,000	$3,814,000

APPENDIX II (Cont'd)

Massachusetts Contracts From AFCRL

Large Businesses

	FY74	FY75
Arthur D. Little	$35,000	------
American Optical	53,000	$50,000
GCA	88,000	70,000
Avco	35,000	247,000
EG&G	30,000	15,000
Tektronix	-------	20,000
Digital Equipment Corp.	68,000	44,000
Honeywell Research Corp.	155,000	395,000
Raytheon	596,000	534,000
Sperry	35,000	139,000
IBM	24,000	--------
Total	$1,119,000	$1,514,000

APPENDIX III

AFCRL As A Part Of Hanscom AFB

(Fiscal Year 1974)

	HANSCOM AFB (TOTAL)	AFCRL	AFCRL PER CENT
EMPLOYEES			
Civilian	2827	904	32.0
Military	1750	155	8.8
TOTALS	4577	1059	23.1
PAYROLL ($ IN MILLIONS)			
Civilian	$51.8	$21.4	41.3
Military	29.0	2.0	6.9
TOTALS	$80.8	$23.4	29.0
PER CAPITA PAYROLL ($ IN THOUSANDS)			
Civilian	$18.3	$23.7	29.5
Military	16.6	12.9	-22.3
Average	17.7	22.1	24.8
MASSACHUSETTS R&D EXPENDITURES ($ IN MILLIONS)			
Educational Institutions	$5.3	$5.0	94.3
Small Businesses (FY73)	11.6	$4.0	34.5