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THE RELATIONSHIP OF THE GENERAL ANALYSIS
AND OPERATIONAL RESEARCH PROGRAM
TO THE PHYSICAL LOCATION OF THE
OPERATIONAL RESEARCH AND ANALYSIS ESTABLISHMENT

by

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A B S T R A C T

This paper provides information on the extent of contact and interaction between the Operational Research and Analysis Establishment and other agencies in the pursuit of the project work assigned to ORAE. The results of a study of ORAE interaction for the 1982/83 program year indicate that the major portion of ORAE's interactive activities were with 101 Colonel By Drive. The major portion of the remainder of ORAE's activities were with organizations outside Ottawa.

R É S U M É

Le présent document traite de l'étendue des rapports et de la collaboration entre le Centre d'analyse et de recherche opérationnelle (CAR Op) et d'autres organismes dans le cadre de projets qui lui sont confiés. Les résultats d'une étude sur le sujet pour l'année de programme 1982-1983 démontrent que le 101 promenade Colonel-By était l'intervenant dans la majorité des activités conjointes. La majeure partie des autres activités du CAR Op ont fait appel à des organismes situés à l'extérieur d'Ottawa.

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THE RELATIONSHIP OF THE GENERAL ANALYSIS
AND OPERATIONAL RESEARCH PROGRAM
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OPERATIONAL RESEARCH AND ANALYSIS ESTABLISHMENT

INTRODUCTION

1. Efforts to ascertain the appropriate site for an organization in relation to other organizations with which working interactions are maintained are usually based on surveys of the extent of contact and the distances involved. In the case of the Operational Research and Analysis Establishment, a General Analysis and Operational Research Program is published annually which could provide much of the necessary data. The Program contains all of the projects, the lists of Sponsors, Cooperating Agencies and Interested Agencies. In addition, many other details including related projects, effort in man-months, the aim, objectives, and priorities are included in each project outline.

2. The lists of Sponsors, Cooperating Agencies and Interested Agencies are a good indication of the contacts required to pursue the work of each project, and of the physical location of the organizations involved. This information has been extracted from all of the projects in the ORAE 1982/83 Program and is attached at Annex A and summarized in the Tables which follow. The data summarized in Tables I - III are for the ORAE units in the Military Stores Building. Not included in these Tables is the information for the Directorates of Manpower and Logistics Analysis as they are not located in the Military Stores Building, but are in L'Esplanade Laurier and 101 Colonel By Drive respectively. These tables, therefore, reflect the interactions required between the units of ORAE in the MSB with organizations in other locations.

3. A total of 67 projects were active in the 1982/83 year and these are included in this summary. There are points to keep in mind when examining the information in Tables I - III. In some cases there is more than one Sponsor for a project -- 18 projects had more than one Sponsor; 37 of the projects had more than one Cooperating Agency; and 45 projects had more than one Interested Agency.

TABLE I
LOCATION OF THE SPONSORS OF ORAE PROJECTS

<u>ORAE Unit</u>	<u>No. of Projects</u>	<u>SPONSOR LOCATIONS</u>			
		<u>101 Col By</u>	<u>Ottawa Not 101 Col By</u>	<u>Outside Ottawa</u>	<u>CORAE</u>
DGGA	1				1
DGOR	3	12	1		
DAOR	8	7			1
DLOR	15	14		3	
DMOR	11	12	1		2
D Strat A	12	11			8
DMS	2	4	4		
DSEA	15	13	3	2	2
Total MSB:	67	73	9	5	14

TABLE II
LOCATION OF THE COOPERATING AGENCIES OF ORAE PROJECTS

<u>ORAE Unit</u>	<u>No. of Projects</u>	<u>COOPERATING AGENCY LOCATIONS</u>			
		<u>101 Col By</u>	<u>Ottawa Not 101 Col By</u>	<u>Outside Ottawa</u>	<u>CORAE</u>
DGGA	1				
DGOR	3	11		5	
DAOR	8	9		1	
DLOR	15	43	6	18	2
DMOR	11	16		13	1
D Strat A	12	9	3	4	
DMS	2			1	
DSEA	15	16	8	2	1
Total MSB:	67	104	17	44	4

TABLE III
LOCATION OF THE INTERESTED AGENCIES OF ORAE PROJECTS

<u>ORAE Unit</u>	<u>No. of Projects</u>	<u>INTERESTED AGENCY LOCATIONS</u>			
		<u>101 Col By</u>	<u>Ottawa Not 101 Col By</u>	<u>Outside Ottawa</u>	<u>CORAE</u>
DGGA	1				
DGOR	3	21	1	2	
DAOR	8	11		4	
DLOR	15	72	14	24	
DMOR	11	30	5	15	
D Strat A	12	33	2	8	
DMS	2	2		2	
DSEA	15	31	14	1	
Total MSB:	67	200	36	56	0

SPONSORS

Sponsors are defined in the General Analysis and Operational Research Program as "agencies for whom projects are undertaken and to whom the findings are submitted".

4. There is little doubt from Annex A and Table I that the location which had the highest ORAE Sponsor Interaction was 101 Colonel By Drive. When the 8 projects sponsored solely by CORAE are set aside, 55 out of 59 projects had one or more sponsors in 101 Colonel By Drive. 73 of the 87 external Sponsors were located in 101 Colonel By Drive, while 9 were in Ottawa but not in 101 Colonel By Drive and 5 were outside of Ottawa (e.g. FMC, DREA, MARCOM, etc.). In summary, 84% of the ORAE/MSB Sponsor interaction in Ottawa was with 101 Colonel By Drive.

COOPERATING AGENCIES

Cooperating Agencies are "those agencies which provide a direct contribution to a project, or which are engaged in complementary studies".

5. A somewhat different pattern for the Cooperating Agencies, but with no less emphasis on 101 Colonel By Drive. The significant aspect with respect to the Cooperating Agencies is the number outside Ottawa. A total of 169 Cooperating Agencies are listed for 57 of the 67 projects. In 4 cases, one of the Cooperating Agencies was another directorate of ORAE. In summary, 104 Cooperating Agencies were in 101 Colonel By Drive, 17 in other Ottawa locations, and 44 outside Ottawa. 86% of the ORAE/MSB Cooperating Agency interaction in Ottawa was with 101 Colonel By Drive.

INTERESTED AGENCIES

Interested Agencies are "those who have indicated interest in a project. Copies of any reports prepared on the project will be provided to them throughout the year".

6. A total of 292 Interested Agencies were involved in 51 of the 67 ORAE/MSB projects. Of the 236 cases of Interested Agency involvement in Ottawa, 200 were with 101 Colonel By Drive. The other Ottawa locations accounted for 36, and there were 56 Interested Agencies outside Ottawa. In summary, 85% of the ORAE/MSB Interested Agency interaction was with 101 Colonel By Drive.

THE DGOR DIRECTORATES

7. In addition to the examination of all of the units of ORAE in the Military Stores Building, it may also be of interest to note the extent of project interaction between the three DGOR Directorates (DAOR, DLOR and DMOR) and other agencies. The basic data for these Directorates are contained in Annex A, Tables I - II and again aggregated in Table IV. The figures in Table IV also contain those projects which were directly assigned to DGOR and not to the Directorates.

TABLE IV
SUMMARY OF DGOR PROJECT INTERACTION
(ALL DGOR DIRECTORATES)

	<u>L O C A T I O N S</u>			
	<u>101 Col By</u>	<u>Ottawa Not 101 Col By</u>	<u>Outside Ottawa</u>	<u>CORAE</u>
Sponsors	45	2	3	3
Cooperating Agencies	79	6	37	3
Interested Agencies	134	20	45	0
TOTALS	258	28	85	6

8. It can be seen that the project interaction with 101 Colonel By Drive far exceeded that for any other single agency, and in fact for all other agencies combined (e.g. 95% of the contact agencies in Ottawa were in 101 Colonel By Drive). Of some interest is the DGOR Directorates' interactions with agencies outside Ottawa. These agencies include the Commands of the Canadian Forces and the Defence Research Laboratories.

OPERATIONAL RESEARCH ACTIVITIES AND PROJECTS
OUTSIDE THE MILITARY STORES BUILDING

(a) Within the Department of National Defence

9. It will be noted that the Directorates of Manpower Analysis (D Man A) and Logistics Analysis (D Log A) are included in Annex A, but not in Tables I to III. As these directorates are not in the Military Stores Building, it was concluded that their statistics with respect to interaction could be treated more meaningfully, and clearly, in a separate manner. A summary of data for D Man A and D Log A from Annex A is presented in Table V.

10. All of D Man A's Sponsors were at its location with personnel organizations of DND in L'Esplanade Laurier, and the emphasis on its interactions lies, to a greater extent, outside 101 Colonel By Drive.

11. D Log A, which is in 101 Colonel By Drive, had more of its Sponsors in other areas of Ottawa, more of its Cooperating Agencies in other areas of Ottawa, but a greater number of its Interested Agencies were in 101 Colonel By Drive.

TABLE V

D Man A/D Log A SPONSOR AND COOPERATING/INTERESTED AGENCY LOCATIONS

<u>ORAE Unit</u>	<u>No. of Projects</u>	<u>Sponsor Locations</u>			<u>CORAE</u>
		<u>101 Col By</u>	<u>Ottawa Not 101 Col By</u>	<u>Outside Ottawa</u>	
D Man A	8		9		
D Log A	12	12	17	1	
<u>Cooperating Agency Locations</u>					
D Man A	8		16	1	4
D Log A	12	21	30	4	
<u>Interested Agency Locations</u>					
D Man A	8	13	26	2	
D Log A	12	41	30	8	

12. One important area which should not be overlooked in the operational research activities outside Ottawa is the ORAE Field Stations, located with the Commands of the Canadian Forces. The assignment of projects and the establishment of priorities is the prerogative of the Commander at each Command. The Defence Scientist effort at the Commands is approximately 21% of that undertaken in Ottawa.

(b) External to the Department of National Defence

13. Other areas of frequent interaction which are not indicated in the ORAE Program as Sponsors, Cooperating Agencies or Interested Agencies are the contacts outside the Department of National Defence. The contacts external to DND include the cross-section of main contacts shown below.

(i) Canada

Canadian industries (e.g. aircraft, electronics),
Consultants,
Universities,
Other Government Departments (e.g. DSS, EA, EMR,
Environment)

(ii) U.S.A.

Department of Defense
Industry
Commercial and Consulting Operational Research
Organizations (RAND, Hudson Institute, Centre
for Naval Analysis, Georgetown Centre)

(iii) U.K.

Ministry of Defence
Defence Research Establishments
IISS
RUSI
Wilton Park

(iv) NATO

NATO Headquarters
STC, Committees, Panels, Working Groups and OR contacts
in individual nations (notably UK, Germany, France,
Norway).

(v) Working Groups

Quadripartite Groups, TTCP

Contacts with agencies external to DND have a very close connection with projects in the ORAE Program and in the pursuit of the work associated with these projects.

SUMMARY

14. As a measure of the relative amount of interaction between the ORAE units in the Military Stores Building and other organizations, it is submitted that the information portrayed in the Annex and Tables of the paper give a reliable indication of this interaction. It is evident that the major points of interaction are with organizations in 101 Colonel By Drive, amounting to 85% when based upon the Sponsors, Cooperating Agencies and Interested Agencies involved in ORAE projects. The next highest area of project interaction is with the "outside Ottawa" organizations such as Commands and Defence Research Laboratories.

A N N E X A

ORAE PROJECTS WITH THEIR SPONSOR,
COOPERATING AGENCY AND INTERESTED AGENCY INTERACTIONS

A - 101 Colonel By Drive

C - Outside Ottawa

B - Ottawa, Not 101 Colonel By Drive

D - CORAE

DIRECTORATE & PROJECT NO.		SPONSORS				COOPERATING AGENCIES				INTERESTED AGENCIES			
		A	B	C	D	A	B	C	D	A	B	C	D
DGGA	001				1								
					1								
DGOR	201	3						3		3			
	207	5				9		2		9			
	208	4		1		2				9	1	2	
		12		1		11		5		21	1	2	
DAOR	210	1				1		1		1			
	211	1				2				1		1	
	212	1				1							
	213	1				1				2			
	214	1								5		2	
	215	1				1						1	
	217				1	2							
	219	1				1				2			
			7			1	9		1		11		4
DLOR	235	1				1		1		3	1	3	
	236	1				5	1	1		6	1	4	
	237			3		4	1	1		3		2	
	238	1				4	1	3		4		1	
	239	1				3		2	1	11	4	2	
	240	1				1		1		9	5	2	
	241	1				4	1	2		8		2	
	242	1				6		1		3		4	
	245	1				6		3	1	7	1	1	
	248	1				3	2	3		9	1	1	
	251	1				2				4	1	2	

DIRECTORATE & PROJECT NO.	SPONSORS				COOPERATING AGENCIES				INTERESTED AGENCIES			
	A	B	C	D	A	B	C	D	A	B	C	D
DLOR (con't)												
254	1				1				2			
255	1				1				2			
257	1				1							
258	1				1				1		1	
	14		3		43	6	18	2	72	14	24	
DMOR												
275	2				2		3		5	2	2	
276			1				1		2		3	
278	2				4		3		7	1	1	
279	2				2		4		7	2	1	
288	2				1		1		2		1	
289		1			2				4		4	
291	1				3				2		1	
293	1				1				1		2	
294	1				1		1	1				
296			1									
297	1											
	12	1		2	16		13	1	30	5	15	
D Strat A												
101				1								
104	2					1	1		5	1		
105	2		1		1	1	1		5	1		
107			1		2		1		9		3	
112	1				3				5		4	
125	1		1									
128			1		1							
131	1		1				1		1			
132	1		1		1	1			8		1	
133	1				1							
134	1											
135	1		1									
	11			8	9	3	4		33	2	8	
DMS												
302	1	4							2		1	
303	3						1				1	
	4	4					1		2		2	

DIRECTORATE & PROJECT NO.	SPONSORS				COOPERATING AGENCIES				INTERESTED AGENCIES			
	A	B	C	D	A	B	C	D	A	B	C	D
D Man A												
403		2				2			2	1	1	
411		1				4			2	5	1	
423		1				2			3	5		
424		1				1			2	2		
425		1				3	1	1		3		
426		1				2			1	4		
427		1				1		2		1		
428		1				1		1	3	5		
		9				16	1	4	13	26	2	
D Log A												
501	2	1			1	3			1	3		
503		1				2			4	3		
505	1					3			4	1		
510	1	1				2			1	3		
513	1	5			6	3			11	3	2	
514	2	1				3			3	1		
515	1	3			4	3	1		5	5	1	
516	2	4			4	1				3	1	
517	1				1	2			3			
519	1				4	3			5	2	3	
520		1				3	1		4	6		
521			1		1	2	2				1	
	12	17	1		21	30	4		41	30	8	
DSEA												
704	1				1	1	1		7	2	1	
707	1				2				3	1		
717	1											
720				1	2	2			3			
726	1	1						1	2	2		
730	2	1	1			1	1		3	3		
732				1	2				3	1		
734		1				1			1			
735	1				3				2	1		
736	1				1				1	1		
737	1											
738	1				1	1				1		
739	1				3	1			4			
740	1				1	1			2	2		
741	1		1									
	13	3	2	2	16	8	2	1	31	14	1	

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