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**NATIONAL RESEARCH COUNCIL OF CANADA  
RADIO AND ELECTRICAL ENGINEERING DIVISION**



**ANALYZED**

**SUMMARY OF PUBLICATIONS AND REPORTS OF THE RADIO  
AND ELECTRICAL ENGINEERING DIVISION FOR 1963**

**W. F. CHISHOLM**

**OTTAWA**

**MAY 1964**

SUMMARY OF PUBLICATIONS AND REPORTS OF THE RADIO  
AND ELECTRICAL ENGINEERING DIVISION FOR 1963

- W.F. Chisholm -

The author has been asked to prepare the present report for the information of the scientific and engineering staff of the Division. This is the ninth annual summary of publications and reports. Previous annual reports (ERB-400, -450, -460, -500, -550, -590, -600, -630) covered the period from 1951 to 1962. The present report provides a quantitative summary of ERB reports, articles published in scientific and technical journals by the staff of the Division, books published by the staff, and quarterly Bulletins and Progress Reports. ERB reports are distributed according to a special list compiled for each report. Nineteen unclassified ERB reports were issued in 1963. However, since scientific and technical journals are more widely circulated and read than ERB reports, the practice in the Division is to submit unclassified material to these journals for publication, where possible. ERC reports are not included in this summary; this class of report covers tests made at the request of Canadian manufacturers or other technical organizations. In the case of publications by two or more authors belonging to different Sections of the Division, credit is divided equally among the respective Sections; this is not done, however, in the case of quarterly Bulletins and Progress Reports since they contain a fairly representative contribution from all Sections.

Publications and reports for the entire 13-year period from 1951 to 1963 are summarized graphically in Figs. 1 to 4. Table I gives comparative statistics for 1962 and 1963. Fig. 1 and Table I are based on the number of pages in each report or publication. Illustrations are enumerated in the same way as text. No attempt is made to evaluate the quality of publications or reports.

In 1963 unclassified report material reached the record output of 909 pages or 46.1% of the total output for the year (Table I). The corresponding figure for 1962 was 463 pages. The increase was due mostly to the publication, by the Space Electronics Section, of five reports of 40 to 50 pages each, giving the requirements for specific rocket tests at Churchill and of a large bibliography of publications of the Division. The Antenna Engineering Section also produced two rather large reports. Quarterly Bulletins were, as usual, included in the enumeration of the unclassified report output. Previous maxima in unclassified report output occurred in 1957 and 1961 (Fig. 1). The 1957 output included a large technical manual and a bibliography. In 1961, 626 pages were produced, which included three rather large technical manuals and two bibliographies that comprised over 70% of the unclassified report material for that year. It was thought that after 1957 the amount of unclassified report output would decrease steadily; since 1960 the general trend has been reversed.

The classified report material of 256 pages was substantially lower than that of 1962 (368 pages). There was also a corresponding decrease in the number of these reports. Defence Section I, with five reports, produced the most classified material.

Two final project reports were issued by the Space Electronics Section which is no longer engaged in classified work. The amount of classified material has been decreasing since 1957 (Fig. 1), and is now approaching the low point of 1951.

Although the number of journal publications is greater than in 1962, the number of pages published is less than in the preceding year for the first time since 1952. However, no books were published by the staff in 1963, as they were in 1961 and 1962. Of the 806 pages of journal publication for 1963, 94 pages were contributions to the Braille Technical Press.

The total number of publications of all three categories has been rising slowly for the past three years and is now the highest since 1960 (Fig. 2). The total number of pages reached a record high (1971 pages, Fig. 1), more than 7% above the previous record in 1961; this was due to the increase in unclassified material.

The total number of pages per man (Fig. 4) was 20.3, the highest total we have had, and the number of publications per man (1.4) is next to that of 1960 (1.5) (Fig. 3).

There was some reduction of staff in 1963 and a slight enhancement in academic qualifications.



TABLE I

## SUMMARY OF PUBLICATIONS AND REPORTS 1962-63

SECTION or SOURCE	1962							1963						
	Unclassified Reports (no. of pages)	Classified Reports (no. of pages)	Publications in Journals (no. of pages)	Total (no. of pages)	Total no. of Publications	Staff	Total no. of Pages per Man	Unclassified Reports (no. of pages)	Classified Reports (no. of pages)	Publications in Journals (no. of pages)	Total (no. of pages)	Total no. of Publications	Staff	Total no. of Pages per Man
Antenna Engineering	-	-	-	-	-	-	-	129	22	55	206	14	8	25.8
Defence I	0	94	286	380	10	12	31.7	0	118	0	118	5	12	9.8
Electrical Engineering	66	0	305	371	13	15	24.7	37	0	107	144	12	14	10.3
Electron Physics	-	-	-	-	-	-	-	0	0	189	189	13	8	23.6
Engineering Design	0	0	0	0	0	5	0	0	0	0	0	0	5	0
Instrument	29	0	83	112	19	6	18.7	62	0	138	200	21	6	33.3
Microwave	47	82	116	245	29	26	9.4	-	-	-	-	-	-	-
Navigation Aids	0	35	22	57	10	9	6.3	9	0	39	48	9	6	8.0
Radio Astronomy	-	-	-	-	-	-	-	23	0	44	67	10	13	5.2
Space Electronics	100	79	58	237	22	16	14.8	432	47	49	528	20	14	37.7
Upper Atmosphere Research	11	0	77	88	14	10	8.8	0	0	135	135	18	8	16.9
Administration	23	0	3	26	3	4	6.5	5	0	50	55	2	3	18.3
Bulletins and Progress Reports	187	78	-	265	8	-	-	212	69	-	281	8	-	-
Total	463	368	950	1781	103	17.3*	17.3*	909	256	806	1971	97	20.3*	20.3*
Percentage of Total	(26.0%)	(20.7%)	(53.3%)					(46.1%)	(13.0%)	(40.9%)				
Total no. of Publications	20	18	90		128		1.2*	23	12	97		132		1.4*

\*average value

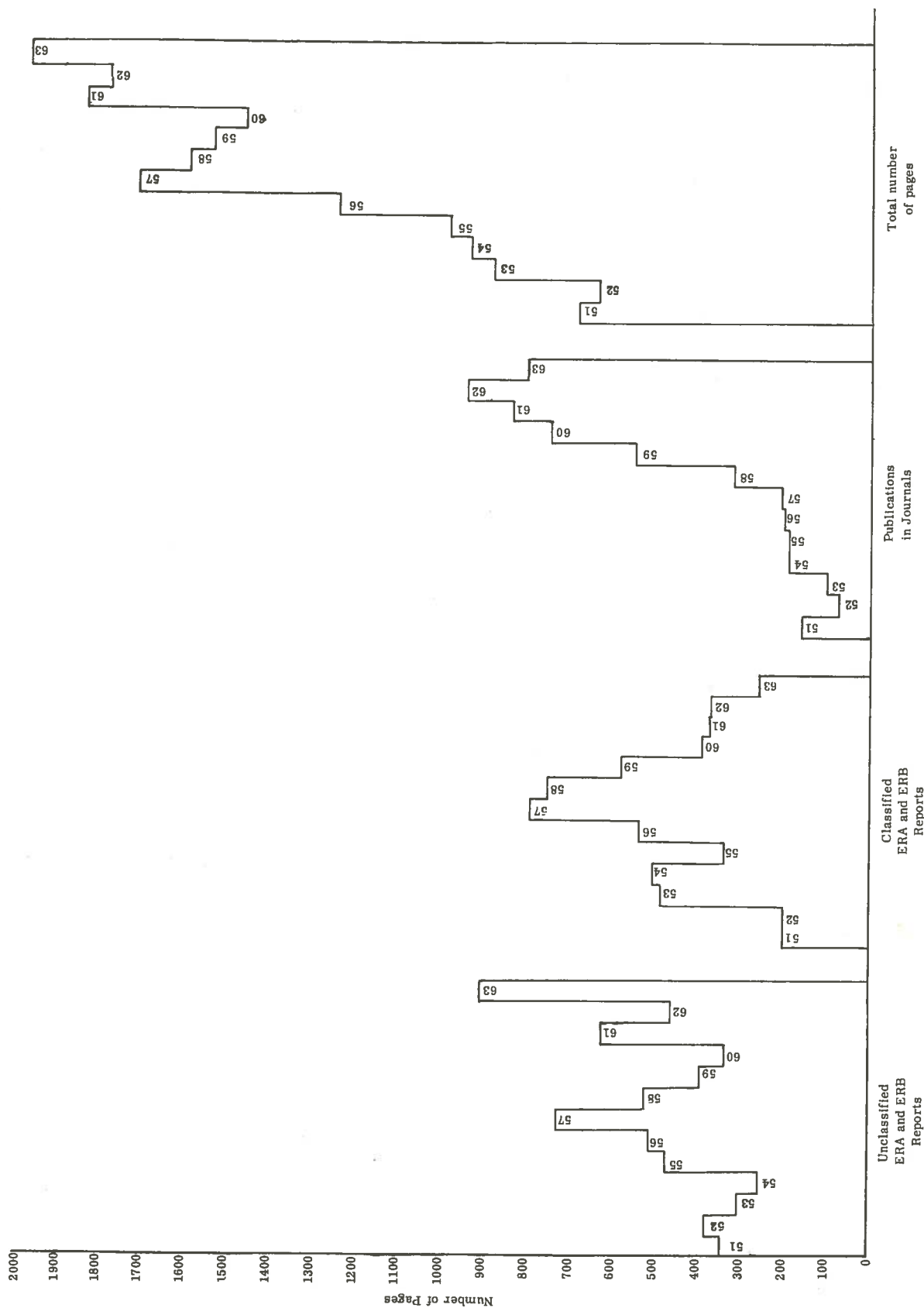


FIG. 1 SUMMARY OF PUBLICATIONS AND REPORTS 1951-1963

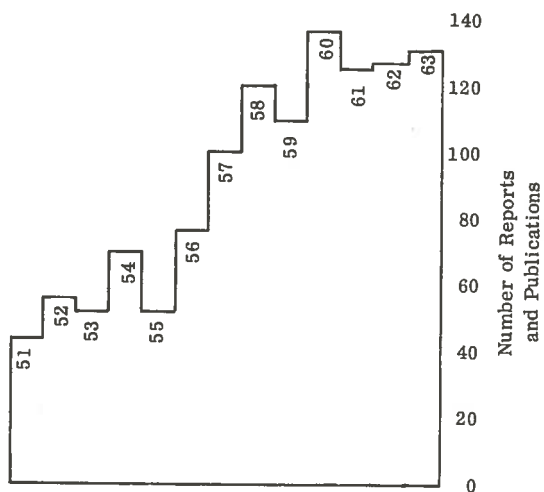


FIG. 2

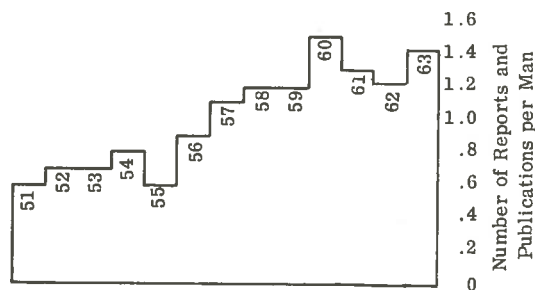


FIG. 3

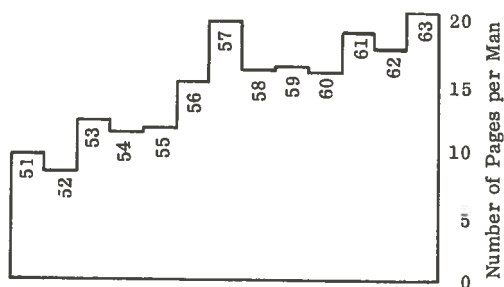


FIG. 4

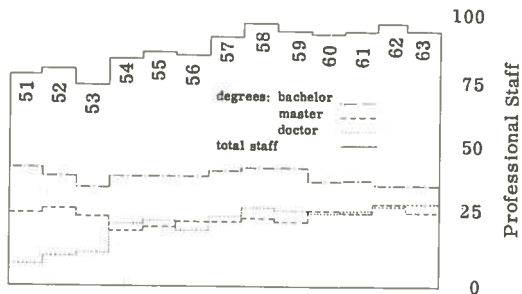


FIG. 5

# SUMMARY OF PUBLICATIONS AND REPORTS 1951-1963