

# NACA / NASA Document Indexing: 1915 - 1995

## Introduction

The National Advisory Committee for Aeronautics (NACA) was created in 1915, and in 1958 was renamed as the National Aeronautics and Space Administration (NASA). Since its inception, the organization has authored thousands of reports in various report series. Many of these documents contain information which is still useful to both students and faculty, as well as researchers involved with NASA's current missions. Because of this, it is imperative that comprehensive and accessible indexing tools are available to search the NACA / NASA literature.

## Purpose of the paper

In order to find and retrieve these reports, NACA / NASA has developed various indexes, first in print and now online. In addition, commercial database vendors have developed products which index some of the NACA / NASA produced documents. This paper samples the NACA / NASA literature and evaluates the ability of five databases to index that literature. The purpose of the study is to determine the best database(s) for librarians and researchers to use as they perform literature searches within NACA / NASA generated documents.

## Sampling methodology

The samples from the NACA / NASA generated documents were collected from hardcopy NACA / NASA indexes subject to the following general guidelines:

- 1) The purpose of the paper is to determine the extent of NACA / NASA publication indexing. Therefore, only NACA / NASA generated documents were included in the samples. Specifically, Contractor Reports (CR), Special Publications (SP), Technical Memorandums (TM), Technical Notes (TN), and Technical Papers (TP) were included.
- 2) Papers outside the above categories were not used. Thus, journal articles, conference papers, translations, patents, patent applications, theses, dissertations, and other documents outside of NACA / NASA, even though they are indexed in the NACA / NASA indexes, were not included in the sampling.
- 3) The specifics for locating citations in each title are given below. At a starting page number specific to each NACA / NASA index, citations were scanned until a NACA / NASA document was located. In some cases the actual page number where the citation is located differs from the starting page number. This is because some indexes had several pages of conference paper, dissertation, or journal article indexing before a NACA / NASA document was located.

There are three major sources for the citations in the tables: the *Index of NACA Technical Publications*, the *NASA Technical Publications Announcements*, and the *Scientific and Technical Aerospace Reports*. A total of 59 citations was selected from these print indexes. The specifics for selecting the citations for each are as follows:

### ***Index of NACA Technical Publications***

For the single volume compilation from 1915 – 1949, the first appropriate citation at intervals of 50 pages was taken. Therefore, a citation was taken from page 50, 100, 150 . . . . . 550, for a total of eleven citations. For the two-year and single year volumes, the first appropriate citation was taken from page 10 of each volume, for a total of seven citations from those volumes.

*Index of NACA Technical Publications 1915 - 1949.* National Advisory Committee for Aeronautics, Division of Research Information. 1949.

*Index of NACA Technical Publications 1949 – May, 1951.* National Advisory Committee for Aeronautics, Division of Research Information. 1952.

*Index of NACA Technical Publications June, 1951 – May, 1953.* National Advisory Committee for Aeronautics, Division of Research Information. 1953.

*Index of NACA Technical Publications June, 1953 – May, 1954.* National Advisory Committee for Aeronautics, Division of Research Information. 1954.

*Index of NACA Technical Publications June, 1954 – May, 1955.* National Advisory Committee for Aeronautics, Division of Research Information. 1955.

*Index of NACA Technical Publications June, 1955 – June, 1956.* National Advisory Committee for Aeronautics, Division of Research Information. 1956.

*Index of NACA Technical Publications July, 1956 – June, 1957.* National Advisory Committee for Aeronautics, Division of Research Information. 1957.

*Index of NACA Technical Publications July, 1957 – June, 1958.* National Advisory Committee for Aeronautics, Division of Research Information. 1959.

### ***NASA Technical Publications Announcements***

For Volume 1, which covers issues No. 1 (November 14, 1958), through No. 70 (April 26, 1962), the first citation on page two of every tenth issue was selected. Thus, a citation was selected from issues 10, 20, 30, . . . 70, for a total of 7 citations. For Volume 2, which covers issues No. 1 (April 12, 1962), through No. 19, (December 20, 1962), one citation was selected from page 50.

*NASA Technical Publications Announcement. Volume 1.* National Aeronautics and Space Administration, Division of Research Information. 1958 – 1962.

*NASA Technical Publications Announcement. Volume 2.* National Aeronautics and Space Administration, Division of Research Information. 1962.

## ***Scientific and Technical Aerospace Reports***

For each volume, the first appropriate citation was selected from page 50, for a total of 33 citations.

*Scientific and Technical Aerospace Reports*. National Aeronautics and Space Administration, Office of Scientific and Technical Information. 1963 – 1995.

### **Citation searching**

Each citation retrieved from the NACA / NASA indexes was searched for in five databases:

- *Compendex*, *INSPEC*, and *NTIS*, all through the Engineering Village interface.
- *NASA Technical Reports Server*, located at <http://ntrs.nasa.gov/>
- *Aerospace & High Technology Database* through the ProQuest / CSA / Illumina interface.

The initial search was done using an author / title keyword combination search. If this produced no results, further searching was done using title keywords, report numbers, or other information as available to confirm that the record was not in the database.

A condensed version of the results is in the following tables. They show whether each document is included in each database. Because of space restrictions the tables do not include the following information: author, title, and full text availability in NTRS. This complete information is available as an Excel spreadsheet posted at

<http://filebox.vt.edu/users/larryt/NASA/Complete%20Data%20Set.xls>

## Index of NACA Technical Publications

Index Volume or Issue Number	Year NACA or NASA Paper Published	Page Citation Is On	N Number	Report Number	Comp	INSPEC	NTIS	NTRS	CSA	Total
1915-49	1948	50		NACA-RM-L8B02	0	0	0	1	0	1
1915-49	1940	100		NACA-TR-688	1	0	1	1	0	3
1915-49	1929	150		NACA-TR-306	1	0	0	1	0	2
1915-49	1931	200		NACA-AC-136	1	0	0	1	0	2
1915-49	1948	250		NACA-RM-L8H24a	0	0	0	1	0	1
1915-49	1921	300		NACA-TM-32	0	0	0	1	0	1
1915-49	1931	350		NACA-TR-404	1	0	0	1	0	2
1915-49	1945	400		NACA-ACR-5B01	0	0	0	0	0	0
1915-49	1945	450		NACA-TR-827	1	0	1	1	0	3
1915-49	1943	500		NACA-TN-913	0	0	0	1	0	1
1915-49	1942	550		NACA-ARR-	0	0	0	0	0	0
1949-51	1951	10		NACA-TN-2344	1	0	1	1	0	3
1951-53	1951	10		NACA-TR-1051	1	0	0	1	0	2
1953-54	1954	10		NACA-RM-E53J08	0	0	0	1	0	1
1954-55	1952	10		NACA-RM-L52I19a	0	0	0	1	0	1
1955-56	1955	10		NACA-TN-3568	1	0	0	1	0	2
1956-57	1955	10		NACA-TR-1244	0	0	0	1	0	1
1957-58	1955	10		NACA-RM-L55I14	0	0	0	1	0	1

### NASA Technical Publication Announcements

Index Volume or Issue Number	Year NACA or NASA Paper Published	Page Citation Is On	N Number	Report Number	Comp	INSPEC	NTIS	NTRS	CSA	Total
No. 10	1959	2	N89-70590	NASA TN D-42	1	0	0	1	0	2
No. 20	1960	2	N89-71137	NASA TN D-361	1	0	0	1	0	2
No. 30	1960	2		NASA TN D-411	1	0	0	1	1	3
No. 40	1961	2		NASA TN D-669	1	0	0	0	0	1
No. 50	1961	2		NASA TN D-863	1	0	0	0	0	1
No. 60	1961	1		NASA TN D-984	1	0	1	1	1	4
No. 70	1962	2	N62-10919	NASA TN D-1224	0	0	0	1	1	2
V 2 #2	1962	61	N62-10377		0	0	0	0	0	0

### NASA Scientific and Technical Aerospace Reports (STAR)

Index Volume or Issue Number	Year NACA or NASA Paper Published	Page Citation Is On	N Number	Report Number	Comp	INSPEC	NTIS	NTRS	CSA	Total
Vol 1	1963	59	N63-10201	NASA-TN-D-1528	0	0	0	1	1	2
Vol 2	1964	51	N64-10371	NASA-CR-52484	0	0	0	0	0	0
Vol 3	1965	58	N65-10952	NASA-TN-D-2496	0	0	1	1	1	3
Vol 4	1966	51	N66-10602	NASA-CR-67797	0	0	1	1	1	3
Vol 5	1967	60	N67-10416	NASA-CR-79828	0	0	1	1	1	3
Vol 6	1968	50	N68-10219	NASA-CR-89954	0	0	1	1	1	3
Vol 7	1969	51	N69-11114	NASA-CR-66713	0	0	1	1	1	3
Vol 8	1970	56	N70-10688	NASA-TM-X-63729	0	0	1	1	1	3
Vol 9	1971	50	N71-10784	NASA-CR-110911	0	0	1	1	1	3
Vol 10	1972	51	N72-10357	NASA-TN-D-6541	0	0	1	1	1	3
Vol 11	1973	50	N73-10400	NASA-CR-61394	0	0	1	1	1	3
Vol 12	1974	50	N74-10396	NASA-CR-135825	0	0	0	1	1	2
Vol 13	1975	50	N75-10378	NASA-CR-140652	0	0	0	1	1	2
Vol 14	1976	51	N76-10377	NASA-CR-144017	0	0	1	1	1	3
Vol 15	1977	53	N77-10384	NASA-CR-150030	0	0	1	1	1	3
Vol 16	1978	51	N78-10341	NASA-TM-X-71412	0	0	1	1	1	3
Vol 17	1979	50	N79-10377	NASA-CR-157892	0	0	1	1	1	3
Vol 18	1980	52	N80-10378	NASA-CR-160318	0	0	1	1	1	3
Vol 19	1981	53	N81-10344	NASA-TM-78311	0	0	1	1	1	3
Vol 20	1982	53	N82-10361	NASA-TM-81317	0	0	1	1	1	3
Vol 21	1983	50	N83-10325	NASA-CR-167931	0	0	1	1	1	3
Vol 22	1984	52	N84-10332	NASA-CR-168081	0	0	1	1	1	3

Vol 23	1985	52	N85-10342	NASA-TM-77756	0	0	1	1	1	3
Vol 24	1986	50	N86-10290	NASA-TM-87101	0	0	1	1	1	3
Vol 25	1987	72	N87-10391	NASA-TP-2626	0	0	1	1	1	3
Vol 26	1988	50	N88-10317	NASA-CR-178295	0	0	1	1	1	3
Vol 27	1989	51	N89-10277	NASA-CR-183214	0	0	1	1	1	3
Vol 28	1990	51	N90-10293	NASA-CR-180831	0	0	1	1	1	3
Vol 29	1991	56	N91-10332	NASA-TM-103247	1	0	1	1	1	4
Vol 30	1992	51	N92-10267	NASA-CR-187596	0	0	1	1	1	3
Vol 31	1993	70	N93-10800	NASA-TM-108009	0	0	1	1	1	3
Vol 32	1994	55	N94-12569	NASA-TP-3380	1	0	1	1	1	4
Vol 33	1995	52	N95-11686	NASA-TM-108465	0	0	1	1	1	3

<b>Total Hits For Each Index</b>	<b>16</b>	<b>0</b>	<b>33</b>	<b>53</b>	<b>35</b>	
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	<b>Comp</b>	<b>INSPEC</b>	<b>NTIS</b>	<b>NTRS</b>	<b>CSA</b>	
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## **Analysis of the collected data**

Several conclusions can be drawn from the data.

- 1) Most obviously, INSPEC can not be used to retrieve or verify NASA citations.
- 2) The NASA Technical Reports Server provides the best results of all online resources. With a total of 53 citations out of a possible 59, the hit rate is about 90%. This is an encouraging result because the database is freely available, and any institution can access it.
- 3) NTIS and the ProQuest / CSA Aerospace & High Technology Database (CSA) had similar results, with 33 and 35 hits respectively. The distribution is worth noting. The CSA indexed none of the NACA reports, less than 50% of the NASA reports from the late 1950's and early 1960's, but 32 out of 33 reports from STAR, matching the results of the NTRS for that time period. NTIS, on the other hand, had scattered results in both NACA and NTIS.
- 4) Although Compendex did not rank very well overall, with only 16 hits out of 59, there is one anomaly. Of the 59 citations surveyed, 10 (highlighted in yellow) were only listed in one database. Eight were found solely in the NTRS, while the other two were found only in Compendex. Thus, while Compendex did not rank well in overall hits, it appears that if the NTRS does not index a report, that Compendex may be the second choice, especially for the early NASA reports. No indexes, other than Compendex, included a citation not included in the NTRS.
- 5) It is still necessary to search the print indexes in order to verify citations. Of the 59 citations found in the print, four (highlighted in blue), were not included in any of the online databases.

## **Topics for further research**

This study was based upon the NACA / NASA print indexes up until the cessation of STAR in 1995. Since 1995, STAR has been published online by NASA, and is available at <http://www.sti.nasa.gov/Pubs/star/star.html> . However, at the present time NASA has removed online access to the volumes of STAR from 1996 – 2007, and only the 2008 and 2009 issues remain. Further research should be done to determine if the NTRS continues to index the NASA literature as comprehensively for the 1996 – present issues of STAR as it has for the earlier years. It is expected that it does.

Of more importance is the indexing of the non-NASA aerospace related literature. A preliminary and very cursory survey of the literature suggests that a portion of the non-NASA literature indexed in STAR is not included in the NTRS or in the CSA Aerospace and High Technology Database. With the removal of STAR 1996 – 1997 from the NASA website, searching the complete aerospace literature for those years may be problematic. It would be profitable to obtain the STAR indexing for the years 1996 - 2009 to determine the completeness of the NTRS and CSA coverage as compared to STAR.