Letters

Comments on "An Evanescent Mode Waveguide Bandpass Filter at Q-Band"

JOHN HOWARD

It was with considerable surprise that I discovered my results published in the above paper.[1] The design and development of the Craven (Evanescent waveguide)-type filter published in the forementioned paper was solely my effort. The required testing was done mainly by M. Noyes, presently with RCA Astro Electronics, Princeton, NJ. Mr. Noyes also contributed to the mechanical changes necessary for both the ease of tuning and the reduction of loss from the filter. The work was completed on April 16, 1982.

I did not consider at the time that my work warranted publication. Nevertheless, it is felt that this does not provide the right to others to publish my research results without permission.

Certain inaccuracies in the paper have to be corrected. There were three filters constructed, two of which were in copper waveguide and one which was machined from a solid copper block. The machined filter had an electrical response that was slightly worse than the waveguide filters. This is due mainly to inaccuracies introduced in the width of the machined filter cavity. The values of both the theoretical and experimental results in Figs. 2 and 3 of the paper are in error. The filter was designed for 8.6-percent bandwidth. Theoretical analysis showed that the bandwidth was broader and near to 10 percent. This is due to the cutoff frequency of WG 25 being close to the filter passband. Thus [1] as cutoff is approached, the decrease in the value of the propagation constant γ becomes important, and the waveguide filter elements depart substantially from the corresponding elements of the lumped filter. The effect of this general frequency behavior is to make the bandwidth broader than the predicted value. The corrected figures are provided below as Figs. 1 and 2. Mechanical inaccuracies are considered to be responsible for the response differences between theory and experiment.

From this work it may be concluded that Craven-type filters and other components providing low loss, light weight, and small volume may be employed in both the centimeter and millimeter frequency bands.

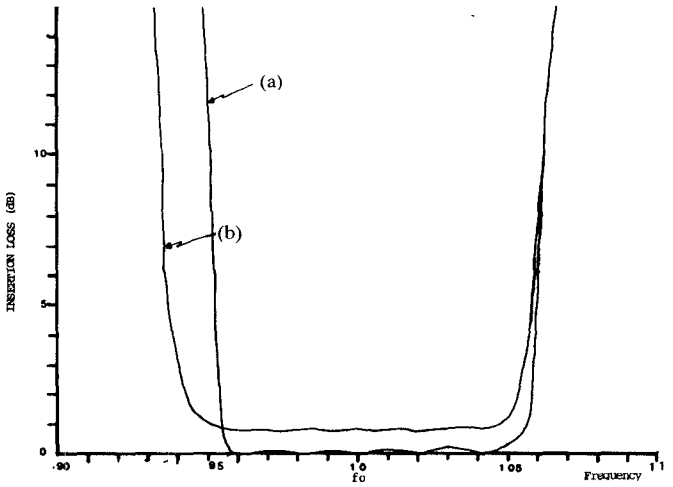

Fig. 1. Insertion loss: (a) theoretical and (b) experimental.

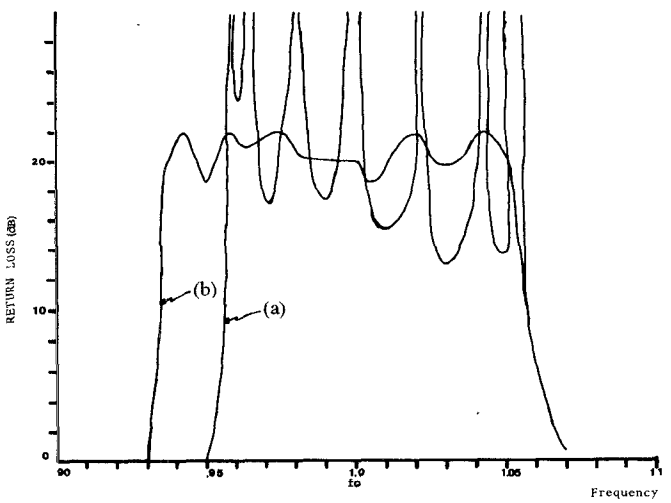

Fig. 2. Return loss: (a) theoretical and (b) experimental

ACKNOWLEDGMENT

The technical advice and constant encouragement of G. F. Craven during the period of this project is gratefully acknowledged.

Reply[2] *by P. D. Allan*[3]

I was expecting the rebuttal on the paper "An Evanescent Mode Waveguide Bandpass Filter at Q-Band" in which I am named as coauthor. Dr. John Howard contacted me shortly after the paper was published to discuss his position; in fact, it was from Dr. Howard that I learned that the paper had been published. I am assuming that it was Dr. Howard who wrote the letter, since the copy I received does not give the author's name.

When Dr. Akers was preparing the original paper (August 1982) he asked me to write a section on the theory and design aspects of the Craven-type filters, directed towards the results published. At some time during the revision of the paper this section must have been removed, since it does not appear (even in part) in the final published version. The only part of the published work that I produced was the theoretical results of the filter response. Consequently, my name should not be included in the byline, since, in my opinion, the work I produced for the paper was omitted from the published version.

I cannot dispute the comments made by Dr. Howard in his letter since I was not directly connected with the development of

Manuscript received December 3, 1984.

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[1] N. P. Akers and P. D. Allan, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-32, pp. 1487–1489, Nov. 1984.

[2] Manuscript received February 2, 1985.

[3] The author is with the Canadian Marconi Company, P.O. Box 13330, Kanata, Ontario, K2K 2B2 Canada.

the particular filter which formed the subject of the paper. At the time of writing the paper I had just completed a project on a dielectric tuned Craven filter, also at Q-Band; although I did duplicate Dr. Howards work in the course of my familiarization of the theory of the Craven filter (this was carried out under Dr. Howard's supervision). It was because of my work on the filter type that Dr. Akers asked me to write a section for the paper. When Dr. Akers made this request I assumed that he had been involved in the filter development, since he was working as a member of Dr. Howards section (I was connected to a separate project team). Dr. Howard had left the company before the paper was prepared.

To comment on Dr. Howard's statements about the published results. It is not unexpected that the performance results given in the paper disagree with Dr. Howards, since they are not of the same filter. Also, the filter used for the paper had been disassembled and reassembled several times, and had to be retuned to obtain the published results.

I cannot explain the differences between the theoretical results, produced by Dr. Howard and myself. I have, since receiving his letter, checked my computer program listing, and so far have not found any errors (although that does not mean one does not exist). I intend to investigate this further.

In conclusion, I do not dispute any of the comments made by Dr. Howard in his letter, apart from the difference in the experimental results, which is explained above. It is also my opinion that Dr. Howard's name should have been included in the byline for the paper, rather than just acknowledged. It was not my intention to publish any of Dr. Howard's work as my own, and had I known that my contribution to the paper was to be omitted I would have had my name removed.

References

[1] G. F. Craven and C K. Mok, "The design of evanescent mode waveguide bandpass filters for a prescribed insertion loss characteristic," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-19, pp. 295–308, Mar. 1971.

Reply to "Comment on 'Single-Post Inductive Obstacle in Rectangular Waveguide'"

Y. LEVIATAN, MEMBER, IEEE, P. G. LI, A. T. ADAMS, SENIOR MEMBER, IEEE, AND J. PERINI, SENIOR MEMBER, IEEE

In reply to the above comment,[1] we would like to say that a more complete survey of previous work with inductive posts, which includes that of Abele [1], is presented in our paper on multiple-post inductive obstacles [2].

References

[1] T. A. Abele, "Inductive post arrays in rectangular waveguide," *Bell Syst. Tech. J.*, vol. 57, pp. 577–594, Mar. 1978.

[2] P. G. Li, A. T. Adams, Y. Leviatan, and J. Perini, "Multiple-post inductive obstacles in rectangular waveguide," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-32, pp. 365–372, Apr. 1984.

Manuscript received January 16, 1985.

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[1] J. H. Cloete, *IEEE Trans. Microwave Theory Tech.*, vol. MTT-33, pp. 437, May 1985.

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