

Ottawa, Monday, February 26, 1996

Appeal Nos. AP-94-340, AP-95-133 and AP-95-136

IN THE MATTER OF appeals heard on September 19, 1995,  
under section 67 of the *Customs Act*, R.S.C. 1985, c. 1  
(2nd Supp.);

AND IN THE MATTER OF decisions of the Deputy Minister of  
National Revenue dated January 17, August 24 and  
September 8, 1995, with respect to requests for re-determination  
under section 63 of the *Customs Act*.

**BETWEEN**

**NORTHERN TELECOM CANADA LIMITED**

**Appellant**

**AND**

**THE DEPUTY MINISTER OF NATIONAL REVENUE**

**Respondent**

**DECISION OF THE TRIBUNAL**

The appeals are allowed.

Raynald Guay  
Raynald Guay  
Presiding Member

Arthur B. Trudeau  
Arthur B. Trudeau  
Member

Desmond Hallissey  
Desmond Hallissey  
Member

Michel P. Granger  
Michel P. Granger  
Secretary

**UNOFFICIAL SUMMARY**

**Appeal Nos. AP-94-340, AP-95-133 and AP-95-136**

**NORTHERN TELECOM CANADA LIMITED**

**Appellant**

**and**

**THE DEPUTY MINISTER OF NATIONAL REVENUE**

**Respondent**

*The goods in issue are transmitter and receiver modules imported by the appellant from a related company located in the United Kingdom. The modules are mounted on printed board assemblies which are used as components in various types of telecommunication equipment. The issue in these appeals is whether the optoelectronic transmitter and receiver modules imported by the appellant are properly classified under tariff item No. 8517.40.91 as “Electrical apparatus for line telephony or line telegraphy ... Other apparatus, for carrier-current line systems ... Telephonic,” as determined by the respondent, or should be classified under tariff item No. 8542.20.00 as “Electronic integrated circuits and microassemblies ... Hybrid integrated circuits” (HICs), as claimed by the appellant.*

**HELD:** *The appeals are allowed. The only aspects of the definition of HICs in Note 5 to Chapter 85 of Schedule I to the Customs Tariff which are at issue are whether the goods in issue “are combined to all intents and purposes indivisibly” and, if so, whether this occurs on a “single insulating substrate.” The Tribunal is of the view that the goods in issue are indivisible, as they are built to function as a single unit. In addition, they are hermetically sealed, are fitted as a single unit directly into the system in which they work and are not repairable. The Tribunal is of the view that the modifying word “insulating” speaks to the electrical, as opposed to the physical, properties of the substrate. The evidence shows that the goods in issue have a single insulating substrate from an electrical perspective. Therefore, the Tribunal is of the view that the goods in issue are HICs. As Note 5 specifically provides that “[e]lectronic integrated circuits and microassemblies” include HICs and the goods in issue have been determined to be HICs, the Tribunal finds that the goods in issue should be classified in heading No. 85.42 and, specifically, under tariff item No. 8542.20.00.*

*Place of Hearing: Ottawa, Ontario  
Date of Hearing: September 19, 1995  
Date of Decision: February 26, 1996*

*Tribunal Members: Raynald Guay, Presiding Member  
Arthur B. Trudeau, Member  
Desmond Hallissey, Member*

*Counsel for the Tribunal: Hugh J. Cheetham*

*Clerk of the Tribunal: Anne Jamieson*

*Appearances: W. Jack Millar and James A. Bodi, for the appellant  
Brian Tittmore, for the respondent*

Appeal Nos. AP-94-340, AP-95-133 and AP-95-136

**NORTHERN TELECOM CANADA LIMITED**

**Appellant**

**and**

**THE DEPUTY MINISTER OF NATIONAL REVENUE**

**Respondent**

TRIBUNAL: RAYNALD GUAY, Presiding Member  
ARTHUR B. TRUDEAU, Member  
DESMOND HALLISSEY, Member

### REASONS FOR DECISION

These are appeals under subsection 67(1) of the *Customs Act*<sup>1</sup> (the Act) from decisions of the Deputy Minister of National Revenue dated January 17, August 24 and September 8, 1995.

The appellant is a manufacturer of telecommunication equipment which it sells domestically and internationally. The goods in issue are transmitter and receiver modules imported by the appellant from a related company located in the United Kingdom. The modules are mounted on printed board assemblies which are used as components in various types of telecommunication equipment. The goods in issue convert electrical signals to optical signals and vice versa.

The goods in issue were imported in a number of transactions occurring in 1993, 1994 and 1995. The goods in Appeal No. AP-94-340 consist of transmitters and receivers of models OC-3 and OC-12. At the time of importation, the transmitters were classified under tariff item No. 8518.10.00 of Schedule I to the *Customs Tariff*.<sup>2</sup> The receivers were classified under tariff item No. 8525.10.90. The appellant subsequently submitted an adjustment request in February 1994. On August 9, 1994, a decision was made under subsection 60(3) of the Act, classifying the goods in issue under tariff item No. 8517.40.90 as "Other apparatus, for carrier-current line systems ... Other." The appellant filed a request for re-determination, and the respondent subsequently maintained the classification of the goods in issue.<sup>3</sup> Prior to the hearing of this matter, Appeal Nos. AP-95-133 and AP-95-136 were joined with Appeal No. AP-94-340. These appeals deal with transmitters and receivers of model OC-48.

At the outset of the hearing, counsel for the appellant indicated that the appellant was prepared to accept the respondent's decision in respect of the OC-3 and OC-12 modules and, thus, was withdrawing Appeal No. AP-94-340. Counsel also indicated that the appellant's evidence and arguments in Appeal Nos. AP-95-133 and AP-95-136 would be limited to the position that the goods in issue should be classified

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1. R.S.C. 1985, c. 1 (2nd Supp.).

2. R.S.C. 1985, c. 41 (3rd Supp.).

3. As a result of amendments to Schedule I to the *Customs Tariff* issued January 1, 1994, tariff item No. 8517.40.90 was split into two tariff items, that is, tariff item Nos. 8517.40.91 (Telephonic) and 8517.40.92 (Telegraphic). The respondent subsequently classified the goods in issue in Appeal Nos. AP-95-133 and AP-95-136 under tariff item No. 8517.40.91.

under tariff item No. 8542.20.00. In other words, the appellant accepted that, if the goods in issue should not be classified under tariff item No. 8542.20.00, then they are properly classified under tariff item No. 8517.40.91 as “Electrical apparatus for line telephony or line telegraphy ... Other apparatus, for carrier-current line systems ... Telephonic,” as determined by the respondent. Counsel for the respondent had no objection or comments to add to counsel for the appellant’s statements as to the issues between the parties.

The issue in these appeals is, therefore, whether the OC-48 optoelectronic transmitter and receiver modules imported by the appellant are properly classified under tariff item No. 8517.40.91 as “Electrical apparatus for line telephony or line telegraphy ... Other apparatus, for carrier-current line systems ... Telephonic,” as determined by the respondent, or should be classified under tariff item No. 8542.20.00 as “Electronic integrated circuits and microassemblies ... Hybrid integrated circuits” (HICs), as claimed by the appellant.

The relevant tariff nomenclature in Schedule I to the *Customs Tariff* reads as follows:

85.17	<i>Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems.</i>
8517.40	<i>-Other apparatus, for carrier-current line systems</i>
8517.40.91	<i>---Telephonic</i>
85.42	<i>Electronic integrated circuits and microassemblies.</i>
8542.20.00	<i>-Hybrid integrated circuits</i>

Note 5 to Chapter 85 of Schedule I to the *Customs Tariff* states that “[f]or the classification of the articles defined in this Note, heading Nos. 85.41 and 85.42 shall take precedence over any other heading in the Nomenclature which might cover them by reference to, in particular, their function.” In this regard, Note 5 provides that “[e]lectronic integrated circuits and microassemblies” include HICs, which are defined as follows:

- (b) *Hybrid integrated circuits in which passive elements (resistors, capacitors, interconnections, etc.), obtained by thin- or thick-film technology, and active elements (diodes, transistors, monolithic integrated circuits, etc.) obtained by semiconductor technology, are combined to all intents and purposes indivisibly, on a single insulating substrate (glass, ceramic, etc.). These circuits may also include discrete components.*

Counsel for the appellant called two witnesses. The appellant’s first witness was Mr. Dieter H. Hundrieser, Manager, Optoelectronic Quality and Qualification, for Northern Telecom and Bell Northern Research. His responsibilities are to ensure that the product developed and manufactured meets all applicable performance standards and, in particular, reliability specifications. With respect to the goods in issue, Mr. Hundrieser indicated that he was involved extensively in their development, especially the proprietary ultra clean sealing technology used to ensure their reliability.

Mr. Hundrieser described the goods in issue as hermetic hybrid integrated circuits used in high-speed digital transmission systems which carry telephone traffic or data traffic between central switching offices. For example, a long distance call would be routed through an OC-48 fibre optic transport system. The principal function of the transmitter is to convert digitally coded electronic signals into the equivalent optical signals. The receiver converts the optical signals into electronic signals. He noted that the goods in issue operate at very high frequencies, which are, for instance, approximately 80 times higher than the frequencies of FM radio or TV systems.

Mr. Hundrieser described how the modules are manufactured in special “clean room” conditions so that their very sensitive components, particularly the lasers and photodiodes, are not contaminated. The lasers are located on temperature-controlled stages within the modules to stabilize them because they are extremely temperature sensitive. These stages act as a thermal insulator between the two substrates in the module which are physically separate. Mr. Hundrieser stated that, from an electrical point of view, there is a continuous single substrate; otherwise, the high-speed signals going into the laser would be distorted. He also testified that there are passive elements, such as capacitors and inductors, in the modules and active elements, such as laser diodes in the transmitter and photodiodes in the receiver. These elements are connected to the substrate either by conductive epoxy bonding and/or wire bonding. With respect to the role of the module lid, Mr. Hundrieser indicated that the lid is welded onto the unit and, thus, forms a hermetic seal, i.e. it keeps out atmospheric gases which can affect a module’s operation. He was of the view that the lid was definitely part of the goods in issue. He noted that the OC-3 and OC-12 models were not hermetically sealed.

Asked to comment on the description of the goods in issue set out in the report<sup>4</sup> of Mr. M.A. Ali, Mr. Hundrieser stated that this was an accurate description. He also stated that, in operating its business, the appellant did not ship “repaired” products to customers. He noted that, unlike the goods in issue, the OC-3 and OC-12 models were repairable. Finally, Mr. Hundrieser testified that the goods in issue would be considered HICs in the industry, as they are a hermetic circuit and are formed or integrated on a ceramic material.

During cross-examination, Mr. Hundrieser acknowledged that there is a physical separation in the ceramic substrate of the goods in issue, but reiterated his view that, as far as the microwave signal is concerned, the goods in issue have a single dielectric substrate and that the gap in the substrate is there strictly for thermal isolation, i.e. to allow for control of the temperature of the laser or the diodes. He also testified that the transmitter has another substrate between the laser and the thermoelectric cooler. Again, although this substrate is physically separate from the other substrates, it is connected to them in the sense that they are all part of the optical train. With respect to the repairability of the goods in issue, Mr. Hundrieser testified that he was not aware of any process by which the goods in issue could be unsealed, repaired and resold or sent back to a customer. He also noted that the Bellcore standards that apply to the goods in issue do not allow for the repair of these types of modules.

In response to questions from the Tribunal, Mr. Hundrieser stated that the term “hybrid circuit” means the mixing of component technologies on a substrate. It is important to have a single substrate or single dielectric because of transmission requirements. He acknowledged that there is a gap between the

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4. Document Nos. AP-94-340-13, AP-95-133-4 and AP-95-136-4.

two substrates in the goods in issue for thermal isolation, but repeated that, in terms of electrical transmission properties, there is only a single substrate, and the parts on the two substrates function as one unit. In addition, he testified that the prime design criteria of the goods in issue are not physical, but electronic or electrical and that, in this sense, there is a single insulating substrate.

The appellant's second witness was Mr. Ali. Mr. Ali is a member of the Technical Staff, Component Reliability Assurance with Bell Communication Research. He works at Bellcore Laboratories located in Red Bank, New Jersey. Bellcore is owned by the regional telephone companies created in the United States as a result of the break-up of the Bell system. As part of his job, Mr. Ali is required to analyze in detail the types of systems, down to the component level, being supplied to the regional Bell operating companies. The goods in issue are components in these systems. Mr. Ali was accepted by the Tribunal as an expert in the design, development, manufacture and operation of telecommunication and electronic systems, subsystems and components.

Mr. Ali testified that he was of the view that the definition of HICs in Schedule I is completely compatible with industry definitions of the term. Mr. Ali distinguished OC-3 and OC-12 modules from HICs on the basis that they are repairable and that they are not encapsulated in a sealed unit. He noted that there are requirements in the telecom industry which prohibit the rework of any seals on a device. Thus, to repair and ship a product which has previously been sealed is not acceptable.

With respect to the criterion of having a single insulating substrate, Mr. Ali stated that the key factor in considering this requirement is that it relates to the electrical propagation of signals. From his viewpoint, the goods in issue constitute a single electrical structure. He continued that, in his view, it was too simplistic to consider this issue in context of whether the substrates were physically separate or not. In his opinion, the physical separation found in the substrates of the goods in issue is a design choice made to provide for thermal isolation of the very sensitive part of the HIC from the rest of the components of the unit.

During cross-examination, Mr. Ali refused to call that part of the substrate on which the diode is located a separate assembly. He reiterated his opinion that to say that there is more than one substrate in the goods in issue based on physical separation is a simplistic interpretation that does not reflect the total integrity of the purpose of the goods in issue, namely, its electrical purpose. In his opinion, there is a single substrate.

Counsel for the respondent called one witness, Mr. James Gardner, President and General Manager of Calnet Electronics Inc. in Kanata, Ontario. This company is in the business of designing and marketing microcircuits and other electronic modules for the high-technology industry. Mr. Gardner was accepted as an expert in the design, installation and evaluation of microcircuits and electronic models in the telecommunication industry.

Mr. Gardner agreed with the previous witnesses that the goods in issue contain passive and active elements. He explained that a substrate is an insulator, usually made of ceramic, which holds the various components of the circuit in question. In Mr. Gardner's opinion, the transmitter modules in issue have three separate substrates and the receiver modules, two separate substrates.

During cross-examination, Mr. Gardner agreed that, but for his view that the goods in issue do not have a single insulating substrate, they meet the rest of the definition of an HIC in Note 5. Mr. Gardner acknowledged that he has not had experience with broad-band optoelectronic components such as the goods

in issue nor with components that function at the high-frequency levels at which the goods in issue function. Furthermore, he stated that he was not qualified to speak to the operation of circuits operating at the frequencies of the goods in issue. He mentioned the testimony of the previous witnesses that, at these frequencies, the goods in issue essentially had a single insulating substrate and said that he was not qualified to speak to these statements because he did not have experience in this area. Mr. Gardner also agreed that the goods in issue constitute a single unit.

In argument, counsel for the appellant referenced the “precedence” rule in Note 5 and submitted that the plain meaning of this rule is that, before consideration may be given to classifying the goods in issue in heading No. 85.17, the Tribunal must first determine whether they fall within heading No. 85.42. Counsel submitted that both experts agreed that the goods in issue fell within industry definitions of HICs and that Mr. Ali stated that these definitions were compatible with the legal definition set out in Note 5. Counsel also noted that Mr. Gardner agreed that the goods in issue fell within the legal definition, but for his views on whether there is a single insulating substrate.

With respect to the issue of “single insulating substrate,” counsel for the appellant submitted that it is important to note that the phrase is not “single physical substrate” but rather “single insulating substrate.” This is important because the “insulating” aspect of the substrate is the relevant consideration in the definition. Counsel submitted that the evidence shows that the same ceramic material is used throughout the substrate, that a gap exists as a design feature and that thermal control of the device is critical in this high-frequency, broad-band technology. The purpose of the gap is not to create two separate devices. Rather, there is a single device in electronic terms and, in this sense, a single insulating stratum, without which the goods in issue would not function properly.

With regard to the “indivisibility” of the goods in issue, counsel for the appellant submitted that the evidence shows that the modules are indivisible, in the sense that they are not repairable, at least under normal manufacturing conditions. Furthermore, industry standards indicate that the goods in issue are not to be repaired. Counsel also submitted that Mr. Gardner, the respondent’s own expert, agreed that the goods in issue were, in fact, indivisible.

Counsel for the respondent submitted that there are two primary reasons why the goods in issue could not be classified in heading No. 85.42, first, because they are not indivisible and, second, because the components are not combined on a single insulating substrate. With respect to whether the goods in issue are “indivisible,” counsel submitted that the important part of the modules are the subassemblies within the modules. Counsel submitted that there are at least two subassemblies in each module. In the receiver, there is a main subassembly which contains active and passive elements and a separate subassembly with a photodiode. In the transmitter, there is also a main subassembly and a separate subassembly with a cooler containing the laser. Counsel submitted that it is clear that these subassemblies are separate and divisible within the module.

Counsel for the respondent’s second argument was that the passive and active elements in the modules are not combined on a single insulating substrate. Counsel noted that all the witnesses agreed that, from a physical standpoint, there is more than one substrate in each module. He submitted that the focus of the wording of the legal notes is on the physical aspect or quality and that, in this regard, the evidence shows that there is more than one substrate in each module. Thus, the goods in issue cannot be classified in heading No. 85.42. Counsel noted that, while both experts agreed that the substrates perform an insulating function,

they also agreed that they perform a function in terms of carrying the elements or components. Finally, counsel noted that counsel for the appellant had already agreed that, if the goods in issue cannot be classified in heading No. 85.42, then they should be classified in heading No. 85.17 and, as the respondent was in agreement with this view, he did not make any submissions in this regard.

The Tribunal considers that the goods in issue should be classified under tariff item No. 8542.20.00 as “Electronic integrated circuits and microassemblies ... Hybrid integrated circuits.” The Tribunal comes to this conclusion bearing in mind that it is the legislation and the principles applicable to the interpretation of the legislation, including those set out in the General Rules for the Interpretation of the Harmonized System<sup>5</sup> (the General Rules) that must govern the classification of the goods in issue. The Tribunal is particularly cognizant of Rule 1 of the General Rules. As noted by the Tribunal in *York Barbell Co. Ltd. v. The Deputy Minister of National Revenue for Customs and Excise*,<sup>6</sup> Rule 1 of the General Rules is of the utmost importance when classifying goods under the Harmonized Commodity Description and Coding System.<sup>7</sup> Rule 1 of the General Rules states that classification is first determined by the wording of the tariff headings and any relative section or chapter notes.

The Tribunal agrees with counsel for both parties that, in this case, it is directed by the “precedence” rule in Note 5 to consider the wording of heading No. 85.42 and any legal notes relating to it first and to classify the goods in issue in this heading, if it determines that they fall within it. More specifically, the goods in issue will fall within this heading if they are determined to be HICs. In this regard, the Tribunal notes that the only aspects of the definition of HICs in Note 5 which are at issue are whether the goods in issue “are combined to all intents and purposes indivisibly” and, if so, whether this occurs on a “single insulating substrate.” In all other regards, they clearly satisfy the definition.

Turning first to the issue of “indivisibility,” counsel for the respondent urged the Tribunal to find that the goods in issue are not indivisible, in the sense that they contain subassemblies which are separate and divisible within the module. The Tribunal is of the view that this argument fails to take into account the fact that the goods in issue are built so as to function as a single unit. The Tribunal is of the view that the relevant phrase in the definition of HICs should be understood in this light. In this regard, the indivisibility of the goods in issue is reflected not only in the manner in which they actually operate but also in the fact that they are hermetically sealed in a manner in which the sealing process itself is an integral part of the proper functioning of the unit. Also, the goods in issue are fitted as a single unit directly into the system in which they work and, if problems develop with a particular unit, it is not repaired, but is totally replaced.

With respect to whether the goods in issue contain a “single insulating substrate,” the Tribunal must determine whether this criterion is directed to the electrical or physical qualities of the substrate. The Tribunal notes that both Mr. Hundrieser and Mr. Ali explained that the physical or thermal gap in the substrate exists for design purposes which did not compromise the integrity of the “single substrate” from an electrical perspective. Furthermore, the Tribunal agrees with counsel for the appellant that the modifying word “insulating” speaks to the electrical, as opposed to the physical, properties of the substrate. The Tribunal is persuaded that the evidence shows that the goods in issue have, for purposes of the definition of HICs in

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5. *Supra*, note 2, Schedule I.

6. 5 T.C.T. 1150, Appeal No. AP-91-131, March 16, 1992.

7. Customs Co-operation Council, 1st ed., Brussels, 1987.



Note 5, a single insulating substrate. Therefore, the Tribunal is of the view that the goods in issue are HICs. As Note 5 specifically provides that “[e]lectronic integrated circuits and microassemblies” include HICs and the goods in issue have been determined to be HICs, the Tribunal finds that the goods in issue should be classified in heading No. 85.42 and, specifically, under tariff item No. 8542.20.00.

Accordingly, the appeals are allowed.

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