

U.S. DEPARTMENT OF COMMERCE
OFFICE OF IMPORT PROGRAMS
AND
TREASURY DEPARTMENT
BUREAU OF CUSTOMS

REQUEST FOR DUTY-FREE ENTRY OF
SCIENTIFIC INSTRUMENTS OR APPARATUS

1. Name of applicant institution

University of Georgia

2. Address (Street, City, State, Zip Code)

Department of Geology
Athens, Georgia 30602

Mail application to:

Bureau of Customs
Attention: Tariff Classification Rulings
Washington, D.C. 20226

FOR USE ONLY BY BUREAU OF CUSTOMS

FOR USE ONLY BY
DEPARTMENT OF COMMERCE

Date received by Customs

FEB 27 1975

Customs' application number

75 - 00401

Docket number

NOTE: Instructions for completion of this application are contained in the Department of Commerce Regulations, INSTRUMENTS AND APPARATUS FOR EDUCATIONAL AND SCIENTIFIC INSTITUTIONS (37 F.R. 3892). The regulations should be reviewed prior to completion of this application.

All questions in this application must be fully answered unless not pertinent to the applicant's situation. Failure to do so may result in delays in processing.

If additional space is needed to answer any question, continue on separate sheet, identify question being answered, and attach to application.

3. This is a nonprofit institution established for (Check appropriate box)

Scientific purposes

Educational purposes

ACCEPTED FOR TRANSMITTAL TO
THE DEPARTMENT OF COMMERCE

4. This application is (Check appropriate box)

an original application

a resubmission of Docket number

MAR - 4 1975

Date for the Director, Tariff

Classification Rulings

U. S. Customs Service

5. Description of the article and accompanying accessories, for which duty-free entry is requested.

a. Commercially standard catalogued instrument or apparatus (accessories).

(1) Identify the article and each accompanying accessory, according to the foreign manufacturer's type or model number.
Double Collecting mass spectrometer - V.G. Micromass 602C with digital printer, small

(2) Identify the foreign manufacturer and country of origin.

V.G. Micromass, Nat Lane, Winsford, Cheshire C W F Bx, England

- sample adaptor

(3) Attach the foreign manufacturer's literature (or facsimiles thereof) which describe the article (accessories) and specifies the structural, operational, performance and other characteristics of the article (accessories).
- attached -

b. Special-order variant of standard catalogued instrument or apparatus, which has been significantly modified according to applicant's specifications, with respect to structural, functional and/or performance characteristics.

(1) Identify the article according to its standard nomenclature and foreign manufacturer's type or model number.

(2) Attach a copy of the applicant's specifications describing the required modifications.

(3) Attach a copy of the literature describing the foreign article when sold as a standard instrument or apparatus.

(4) Indicate the extent to which each of the performance specifications applicable to the standard instrument or apparatus have been increased or decreased, if the modifications resulted in a change in the original performance parameters.

c. Article custom-made entirely to applicant's specifications.

(1) Attach a copy of applicant's specifications.

(2) Attach a statement from foreign manufacturer indicating whether the article fulfills applicant's specifications described in (1) above, or the extent to which the article deviated from these specifications.

6. Applicant has (Check appropriate box)

already placed a bona fide order for the article December 30, 1974 (attach purchase order). - attached -
(Date of order)

a firm intention, in event of favorable action on this application to place a bona fide order for the article within the time specified by law.

7. Purposes for which article (accessories) is intended to be used.

a. Description of research purposes should include:

- attached -

6. Applicant has:

- already placed a bona fide order for the article 9/24/76 (Attach order and documents referenced therein.)
(Date of order)
- a firm intention, in event of favorable action on this application, to place a bona fide order for the article within the time specified by law.

7. Purposes for which article (accessories) is intended to be used. (Provide details on separate sheet(s).)

- a. Description of research purposes
- (1) The identity of the materials or phenomena to be studied.
 - (2) The properties of the materials or phenomena to be investigated.
 - (3) The experiments to be conducted.
 - (4) The objectives pursued in the course of the investigations.
 - (5) The techniques used in employing the article (accessories) in achieving the objectives.
 - (6) Other relevant information.
- b. Description of educational purposes
- (1) Name and content of course(s) in which article (accessories) will be used.
 - (2) Length of course(s).
 - (3) Number of students and educational level of students for each listed course.
 - (4) Objective(s) of course(s).
 - (5) Techniques used in employing article (accessories) in achieving educational objectives.
 - (6) Other relevant information.
- c. Specify primary scientific field in which article (accessories) will be used for research and/or educational purposes (e.g., chemistry, biology, etc.).

8. Justification for duty-free entry of article. (Regardless of the answers to parts a. and b., c. is to be answered in its entirety.)

- a. Is there an instrument, apparatus, or accessory of the same general category as the article being manufactured in the United States?
- b. Is there an instrument, apparatus or accessory not of the same general category as the article being manufactured in the United States which may be utilized for the purposes described in Question 7?
- c. Justification of non-equivalency.
- (1) Identify the domestic manufacturer(s) and the respective type or model number(s) of the instrument(s) or apparatus with which the article has been compared.
 - (2) List the structural, performance and other characteristics of the article that you consider pertinent for your intended purposes which are not possessed by the most closely comparable domestic instrument(s) or apparatus.
 - (3) Relate each characteristic listed in (2) above to one or more purposes described in Question 7, by explaining why either (a) the availability of the characteristic permits you to accomplish the relevant purpose(s) that otherwise could not be achieved without the characteristic or, (b) the characteristic permits you to carry the relevant purpose(s) further than can possibly be carried with the similar characteristic of the domestic instrument(s) or apparatus.
- d. If excessive delivery time of domestic instrument(s) entered into decision to purchase the foreign article, answer (1), (2) and (3) below. (Check (4) below if excessive delivery time was not a consideration.)
- (1) State the shortest delivery time quoted by any domestic manufacturer of an instrument or apparatus comparable to the foreign article, from place of shipment to site where instrument or apparatus is to be delivered.
 - (2) State the delivery time quoted by the foreign manufacturer, from place of shipment to site where article is to be delivered.
 - (3) Explain why the delay in receiving a domestic instrument or apparatus of equivalent scientific value to the foreign article for the purposes described in Question 7, shown by the difference between (1) and (2) above, would seriously impair the achievement of these purposes.
 - (4) Excessive delivery time was not a consideration.

9. Description of efforts made by applicant to ascertain the availability of a domestic instrument or apparatus of equivalent scientific value to the foreign article, for the purposes described in Question 7.

a. List names of domestic manufacturers contacted and indicate:

- (1) Means or method utilized to contact domestic manufacturer(s) and approximate dates of such contacts.
- (2) Whether domestic manufacturer(s) was (were) furnished with a description of your technical requirements, such as presented in Question 7.
- (3) Whether domestic manufacturer(s) was (were) requested to bid on an instrument or apparatus in the same technologically competitive class as the article (i.e., one capable of fulfilling the performance and other relevant specifications of the article) without reference to cost limitations, instructed to bid with reference to stipulated limitations on the cost of the instrument or apparatus. (Enclose copies of requests for bid and other relevant correspondence.)
- (4) Whether domestic manufacturer(s) replied to the invitation to bid with an offer either (a) to furnish a standard catalogued instrument or apparatus, or (b) to modify a standard catalogued instrument or apparatus to the extent necessary to meet the applicant's technical requirements. (Enclose copies of bid responses and other relevant correspondence.)

b. If no domestic manufacturers were contacted prior to deciding to purchase the article, indicate the basis for concluding that none of the instruments or apparatus of the same general category as the article, which were being manufactured in the United States, was scientifically equivalent to the article for the purposes described in Question 7.

c. Enclose copies of request for bid, bid response, and any other relevant correspondence between applicant and the foreign manufacturer of article.

10. U.S. Customs Service Entry Information

a. If article has entered the Customs Territory of the United States, indicate

- | | |
|------------------------------|----------------------|
| (1) Port of Entry | (2) Date of Entry |
| (3) Consumption Entry Number | (4) Customs District |

b. If article has not entered the Customs Territory as of the date of this application, so specify by checking the following box .

NOTE: When entry of the article (accessories) is made, the information requested in a. above should be forwarded to: Director, Special Import Programs Division, Room 6886C, Domestic and International Business Administration, U.S. Department of Commerce, Washington, D.C. 20230. The Customs broker or U.S. sales agent for the foreign manufacturer should be able to provide the Customs Entry Information to the applicant or the Department of Commerce.

11. If delivery of the article (accessories) to the applicant precedes the submission of this application, supply appropriate serial number(s).

12. **CERTIFICATION** - The applicant is informed and believes that no instrument or apparatus of equivalent scientific value for the purposes stated in reply to Question 7 above, is being manufactured in the United States.

The above named applicant requests that this application for duty-free importation under the Educational, Scientific, and Cultural Materials Importation Act of 1966 (80 Stat 897), P.L. 89-651) be approved and certifies that all statements in this application are true or believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any duty-free importation entered thereon.

Typed name and title of official under whose direction and control the foreign article will be used

Area code 215

Elizabeth K. Ralph, Research Associate

Telephone number 243-8168

Signature

Date

11/12/76

13. Typed name and title of fiscal officer of institution

Telephone number

Mr. Robert M. Ferrell, FBA/IG

243-7216

NOTE: All official correspondence concerning this application shall be addressed to the official under whose control the article will be used unless applicant specifies that such correspondence be addressed to the fiscal officer named above.

To Fiscal Officer

| DATE | CODE | CLASS | DEPT. NO. | ACCOUNT | JOB NO. | REQ. NO. | ORDER NO. |
|--|------|-------|-----------|---------|---------|----------|---|
| 9/24/76 | 44 | 5 | 26616 | 260 | | 77-2 | 15463 20504 |
| R-22500. | | | | | | | 1. INVOICE IN DUPLICATE TO UNIVERSITY OF PENNSYLVANIA PURCHASING DEPARTMENT PHILADELPHIA, PA. 19174 Telephone 243-7216 2.. Refer to this number on all invoices, packages, and correspondence. 3. No changes to this order unless author- ized by the Purchasing Dept. 4. See terms and conditions on reverse side. |
| TO THE KEARNS GROUP 511 MAIN STREET FORT LEE N J 07024 ATT MR JERRY KEARNS Deliver to 209 S 33RD STREET - DR. E. RALPH (X8168) | | | | | | | |

DEPARTMENT **PHYSICS EAR - 76- 14258** SHIPPING INSTRUCTIONS

| | | EST. COST |
|---|---|-----------|
| 1 | MODEL 622 (FORMERLY MODIFIED 602C) MICROMASS MASS SPECTROGRAPH PAYMENT TERMS: 30% (OF 22500.00) PAYMENT UPON RECEIPT OF ORDER 30% WITHIN 60 DAYS 30% AT TIME OF DELIVERY (APPROXIMATELY 4 MONTHS) 10% WHEN WE ARE SATISFIED THAT IT IS WORKING WELL AS PER QUOTATION TO DR. RALPH PLEASE INVOICE IN ACCORDANCE WITH THE ABOVE MENTIONED TERMS SHIP PREPAID | 22500.00 |

The Trustees of the University of Pennsylvania

Director of Purchases

THIS ORDER IS EXEMPT FROM THE PA. SALES AND USE TAX UNLESS OTHERWISE NOTED—REGISTRATION NO. 51-24095 ALSO FEDERAL EXCISE NO. 23730154F

NOTE: IF ACTUAL COSTS ARE WITHIN 10% OF ESTIMATED COSTS SHOWN, PLEASE PROCESS ORDER—OTHERWISE REQUEST APPROVAL.

11/22/76

| | |
|--|--|
| <p>FORM DIB-338P (Formerly OIPF-768) (2-75)</p> <p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE</p> <p style="text-align: center;">DOMESTIC AND INTERNATIONAL BUSINESS ADMINISTRATION BUREAU OF RESOURCES AND TRADE ASSISTANCE AND U.S. DEPARTMENT OF TREASURY U.S. CUSTOMS SERVICE</p> <p style="text-align: center;">REQUEST FOR DUTY-FREE ENTRY OF SCIENTIFIC INSTRUMENTS OR APPARATUS</p> | <p>1. Name of applicant institution University of Pennsylvania</p> <hr/> <p>2. Address (Street, City, State, Zip Code) Department of Physics DRL/E1 209 S. 33rd St. Philadelphia, Pa. 19174</p> |
| <p>Mail application to: United States Customs Service Attention: Classification and Value Washington, D.C. 20229</p> | <p>FOR USE ONLY BY DEPARTMENT OF COMMERCE</p> <p>Docket number</p> |
| <p>FOR USE ONLY BY UNITED STATES CUSTOMS SERVICE</p> | |
| <p>Date received by Customs</p> | <p>Customs' application number</p> |
| <p>INSTRUCTIONS: This application is to be completed and submitted in accordance with Department of Commerce Regulations, INSTRUMENTS AND APPARATUS FOR EDUCATIONAL AND SCIENTIFIC INSTITUTIONS. Review the Regulations prior to preparation of your application. Questions should be directed to the U.S. Customs Service (202 964-5864) or to the Department of Commerce (202 967-3971), as appropriate. Additional space will be required to answer several questions. Provide such answers on separate sheet(s), identify question being answered, and attach to this form. All questions must be answered completely or, if not, a statement explaining reasons must be provided. NOTE: Incomplete applications shall be returned without processing.</p> | |
| <p>3. a. This is a nonprofit institution established for: <input checked="" type="checkbox"/> Scientific purposes <input checked="" type="checkbox"/> Educational purposes b. Supply proof of Internal Revenue Service nonprofit status, or in the absence thereof, other proof of nonprofit status.</p> | |
| <p>4. This application is: <input checked="" type="checkbox"/> an original application. <input type="checkbox"/> a resubmission of Docket Number(s) _____ ; _____</p> | |
| <p>5. Description of the article and accompanying accessories, for which duty-free entry is requested.</p> <p>a. Identify basic article (e.g., Electron Microscope, Ultramicrotome, etc.): <u>Mass Spectrograph, Micromass Model 622</u></p> <p>b. Identity of the foreign manufacturer and country of manufacture of article: _____ <u>V.G. Micromass, Nat Lane, Winsford, Cheshire CWF Bx, ENGLAND.</u></p> <p>c. Description: (Check appropriate box and provide requested information. All articles and accessories must be listed under 1(a), 2(a), or 3(a) below; attachment of purchase order, catalog, etc., which also may be required, does not satisfy this specific requirement.)</p> <p><input type="checkbox"/> (1) Commercially standard catalogued instrument or apparatus (accessories). (a) List the article and each accompanying accessory according to the foreign manufacturer's nomenclature and type or model number. (b) Attach the foreign manufacturer's literature (or facsimiles thereof) which describes the article (accessories) and specifies the structural, operational, performance and other characteristics of the article (accessories).</p> <p><input checked="" type="checkbox"/> (2) Special-order variant of standard catalogued instrument or apparatus, which has been significantly modified according to applicant's specifications, with respect to structural, functional and/or performance characteristics. (a) List the article and each accompanying accessory according to the foreign manufacturer's nomenclature and type or model number. (b) Attach a copy of applicant's specifications describing the required modifications. (c) Attach a copy of the literature describing the foreign article when sold as a standard instrument or apparatus. (d) Indicate the extent to which each of the performance specifications applicable to the standard equipment or apparatus have been increased or decreased, if the modifications resulted in a change in the original performance parameters. -attached-</p> <p><input type="checkbox"/> (3) Article custom-made entirely to applicant's specifications. (a) List the article and each accompanying accessory according to standard nomenclature. (b) Attach a copy of applicant's specifications. (c) Attach a statement from the foreign manufacturer indicating whether the article fulfills applicant's specifications described in (b) above, or the extent to which the article deviates from these specifications.</p> | |

6. Applicant has:

- already placed a bona fide order for the article 9/24/76 (Attach order and documents referenced therein.)
(Date of order)
- a firm intention, in event of favorable action on this application, to place a bona fide order for the article within the time specified by law.

7. Purposes for which article (accessories) is intended to be used. (Provide details on separate sheet(s).)

- a. Description of research purposes -attached-
- (1) The identity of the materials or phenomena to be studied.
 - (2) The properties of the materials or phenomena to be investigated.
 - (3) The experiments to be conducted.
 - (4) The objectives pursued in the course of the investigations.
 - (5) The techniques used in employing the article (accessories) in achieving the objectives.
 - (6) Other relevant information.
- b. Description of educational purposes -attached-
- (1) Name and content of course(s) in which article (accessories) will be used.
 - (2) Length of course(s).
 - (3) Number of students and educational level of students for each listed course.
 - (4) Objective(s) of course(s).
 - (5) Techniques used in employing article (accessories) in achieving educational objectives.
 - (6) Other relevant information.
- c. Specify primary scientific field in which article (accessories) will be used for research and/or educational purposes (e.g., chemistry, biology, etc.).

8. Justification for duty-free entry of article. (Regardless of the answers to parts a. and b., c. is to be answered in its entirety.)

- a. Is there an instrument, apparatus, or accessory of the same general category as the article being manufactured in the United States? -attached-
- b. Is there an instrument, apparatus or accessory not of the same general category as the article being manufactured in the United States which may be utilized for the purposes described in Question 7? -attached-
- c. Justification of non-equivalency. -attached-
- (1) Identify the domestic manufacturer(s) and the respective type or model number(s) of the instrument(s) or apparatus with which the article has been compared.
 - (2) List the structural, performance and other characteristics of the article that you consider pertinent for your intended purposes which are not possessed by the most closely comparable domestic instrument(s) or apparatus.
 - (3) Relate each characteristic listed in (2) above to one or more purposes described in Question 7, by explaining why either (a) the availability of the characteristic permits you to accomplish the relevant purpose(s) that otherwise could not be achieved without the characteristic or, (b) the characteristic permits you to carry the relevant purpose(s) further than can possibly be carried with the similar characteristic of the domestic instrument(s) or apparatus.
- d. If excessive delivery time of domestic instrument(s) entered into decision to purchase the foreign article, answer (1), (2) and (3) below. (Check (4) below if excessive delivery time was not a consideration.)
- (1) State the shortest delivery time quoted by any domestic manufacturer of an instrument or apparatus comparable to the foreign article, from place of shipment to site where instrument or apparatus is to be delivered.
 - (2) State the delivery time quoted by the foreign manufacturer, from place of shipment to site where article is to be delivered.
 - (3) Explain why the delay in receiving a domestic instrument or apparatus of equivalent scientific value to the foreign article for the purposes described in Question 7, shown by the difference between (1) and (2) above, would seriously impair the achievement of these purposes.
 - (4) Excessive delivery time was not a consideration.

9. Description of efforts made by applicant to ascertain the availability of a domestic instrument or apparatus of equivalent scientific value to the foreign article, for the purposes described in Question 7.

a. List names of domestic manufacturers contacted and indicate: **-attached-**

- (1) Means or method utilized to contact domestic manufacturer(s) and approximate dates of such contacts.
- (2) Whether domestic manufacturer(s) was (were) furnished with a description of your technical requirements, such as presented in Question 7.
- (3) Whether domestic manufacturer(s) was (were) requested to bid on an instrument or apparatus in the same technologically competitive class as the article (i.e., one capable of fulfilling the performance and other relevant specifications of the article) without reference to cost limitations, instructed to bid with reference to stipulated limitations on the cost of the instrument or apparatus. (Enclose copies of requests for bid and other relevant correspondence.)
- (4) Whether domestic manufacturer(s) replied to the invitation to bid with an offer either (a) to furnish a standard catalogued instrument or apparatus, or (b) to modify a standard catalogued instrument or apparatus to the extent necessary to meet the applicant's technical requirements. (Enclose copies of bid responses and other relevant correspondence.)

b. If no domestic manufacturers were contacted prior to deciding to purchase the article, indicate the basis for concluding that none of the instruments or apparatus of the same general category as the article, which were being manufactured in the United States, was scientifically equivalent to the article for the purposes described in Question 7.

c. Enclose copies of request for bid, bid response, and any other relevant correspondence between applicant and the foreign manufacturer of article. **-enclosed-**

10. U.S. Customs Service Entry Information

a. If article has entered the Customs Territory of the United States, indicate

- | | |
|------------------------------|----------------------|
| (1) Port of Entry | (2) Date of Entry |
| (3) Consumption Entry Number | (4) Customs District |

b. If article has not entered the Customs Territory as of the date of this application, so specify by checking the following box .

NOTE: When entry of the article (accessories) is made, the information requested in a. above should be forwarded to: Director, Special Import Programs Division, Room 6886C, Domestic and International Business Administration, U.S. Department of Commerce, Washington, D.C. 20230. The Customs broker or U.S. sales agent for the foreign manufacturer should be able to provide the Customs Entry Information to the applicant or the Department of Commerce.

11. If delivery of the article (accessories) to the applicant precedes the submission of this application, supply appropriate serial number(s).

12. **CERTIFICATION** - The applicant is informed and believes that no instrument or apparatus of equivalent scientific value for the purposes stated in reply to Question 7 above, is being manufactured in the United States.

The above named applicant requests that this application for duty-free importation under the Educational, Scientific, and Cultural Materials Importation Act of 1966 (80 Stat 897), P.L. 89-651) be approved and certifies that all statements in this application are true or believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any duty-free importation entered thereon.

| | |
|---|------------------------------|
| Typed name and title of official under whose direction and control the foreign article will be used Elizabeth K. Ralph, Research Associate | Area code 215 |
| | Telephone number 243-8168 |
| Signature <i>Elizabeth K. Ralph</i> | Date 11/12/76 |
| 13. Typed name and title of fiscal officer of institution Mr. Robert M. Ferrell, FBA/16 | Telephone number 243-7216 |

NOTE: All official correspondence concerning this application shall be addressed to the official under whose control the article will be used unless applicant specifies that such correspondence be addressed to the fiscal officer named above.

To Fiscal Officer

7. a.

This specially designed double collector mass spectrometer (see quotation No. 760910-R attached) is for the purpose of measuring the ^{13}C - ^{12}C stable isotopic ratios of carbon in the form of CO_2 . Therefore it is being designed specifically for the precise measurements of the isotopic ratios of masses 44, 45, and 46.

We measure ^{13}C - ^{12}C ratios as a check on fractionation of natural ^{14}C in plants and other carbon compounds as well as possible laboratory fractionation in the course of processing the samples. For example, inorganic carbon such as limestone is enriched by 2.5% (25 mils) in ^{13}C above ^{12}C . We date mostly organic carbon compounds such as wood and charcoal from archaeological sites. Normally, these have little or no fractionation. However, corn is severely fractionated: its ^{13}C content is midway between limestone and organic carbon. This causes a significant error in ^{14}C dating for which we can correct by measuring $^{13}\text{C}/^{12}\text{C}$ ratios. Another example is that of ancient Egyptian reeds; they are also fractionated in a similar manner.

In connection with this problem of fractionation, we plan to conduct several basic experiments. One is the precise measurement of ^{13}C - ^{12}C ratios of modern plant materials with the new Micromass spectrometer. The radioactive ^{14}C content is now enriched because of the nuclear bomb tests. Therefore, we are able to count the ^{14}C with good precision. (Since normal ^{14}C is only 1 part in 10^{12} parts of the atmospheric CO_2 , it is beyond the limit of detection of mass spectrographs, and we therefore count its radioactivity.) We have assumed, for correction purposes, that the fractionation of ^{14}C is double that of ^{13}C with respect to the abundant (99%) ^{12}C . However, this assumption has been questioned and has never been verified. With the better Micromass 622, this basic question may be resolved.

7. b.

Description of educational purposes.

1) Name and content of course(s) in which article (accessories) will be used:

- a) Anthropology 502: Introduction to Old World Archaeology. Archaeology of Europe, Africa, and Asia, from Lower Palaeolithic to the Neolithic; emergence of the earliest urban civilizations.
- b) Anthropology 515: Faunal Analysis for Archaeologists. Faunal analysis and dating methods for use in identifying and cross-dating animal remains from archaeological sites.
- c) Anthropology 600: Graduate Fundamentals of Archaeology. Archaeological data: methods by which it is gathered and analysed; methods of dating; problems of interpretation. Specifically for graduate students with no background in archaeology.
- d) Geology 407: Petrology for Archaeologists. Fundamentals of the study of rocks and minerals, in thin section, and by chemical analysis.
- e) Geology 501: The Pleistocene. Origin, extent in time and space, and effect of geological processes of Late-Cenozoic climate change; Pleistocene stratigraphy in different parts of the world.
- f) Metallurgy 585: Archaeological Problems and Scientific Solutions. An introduction to scientific analysis of archaeological remains.
- g) Geology 511/Regional Planning: Fundamentals of Soil Science. Geological aspects of soil development, usage, and scientific analysis.
- h) Geology 528/Regional Planning: Chemistry of Soils. Chemical analysis of soils.
- i) Chemistry 223/224: Experimental Physical Chemistry I and II. Analysis of chemical interactions concerning the interface between chemistry and physics with an emphasis on experimentation.
- j) Chemistry 999: Thesis-directed Independent Study and Research. Advanced study and research in all branches of chemistry.
- h) Classical Archeology 405: Introduction to Roman Archeology. Roman civilization as revealed in the archeological record from the early monarchy down to the time of Constantine, including methods and dating techniques.

2) All courses are given for the period of 14 weeks each, are offered once per academic year, and meet for a minimum of three hours per week.

7. b. (contd).

- 3)
 - a) 25 first year graduate students.
 - b) 20 advanced undergraduate and graduate students.
 - c) 25 first year graduate students.
 - d) 10 advanced graduate students.
 - e) 35 advanced undergraduate and graduate students.
 - f) 20 advanced undergraduate and graduate students.
 - g) 15 advanced undergraduate and graduate students.
 - h) 15 advanced undergraduate and graduate students.
 - i) 50 undergraduate students.
 - j) individual advanced graduate students. Arranged as needed.

- 4) See section 7.a.

- 5) This instrument will be used to measure relative quantities of $^{13}\text{C}/^{12}\text{C}$ for correcting radiocarbon dates normally processed for some of the classes listed above. Additionally, this instrument will be used for routine chemical analysis of elements and compounds in the Geology and Chemistry courses listed.

- 6) The radiocarbon laboratory hosts guided tours throughout the academic year for colleges, universities and high schools in the Philadelphia area. Approximately 250 students from these other schools are lectured to concerning methods of radiocarbon dating. The Mass Spectrometer in question would be of great value in demonstrating some of these techniques to these students.

8. a,b.

Nuclide Corporation, 642 East College Ave., State College, Pa. 16801, is the only domestic manufacturer of an isotope ratio mass spectrometer.

8. c. Justification of non-equivalency:

1) Comparison can be made with Nuclide's Model 3-60-RMS which is not competitive price-wise with the Micromass 622 instrument.

2) A direct comparison of the following structural and performance characteristics make the Micromass 622 instrument superior to the Nuclide 3-60-RMS model. These are:

| | <u>V.G. Micromass</u> | <u>Nuclide</u> |
|--|----------------------------|-------------------------|
| a) Vacuum | 10^{-9} torr range | 10^{-8} torr range |
| b) Accelerating voltage | 5000 volts | 3000 volts |
| c) Minimum sample size | 0.025 atm. cm ³ | 0.1 atm cm ³ |
| d) The V.G. Micromass 622, as a modified version of the 602C, has been specifically redesigned to meet the standards necessary for the precise isotopic-ratio determination we require for the δ - ¹³ C correction in dating. The inlet system has been almost completely changed from the standard type found in either the 602C or the Nuclide 3-60-RMS. The bridge circuitry for ion detection does not employ the mechanically balanced-servo system implemented by a chart recorder in the 602C. Unlike the Nuclide system, the standard output is digital. As such, the mass spectrograph has been custom tailored to meet our requirements. | | |

9. (a). *

1) Contact was made with the representatives of Nuclide Corporation about their mass spectrometers. Nuclide Corporation submitted technical data on their model 3-60-RMS.

2,3) After reviewing the performance and technical characteristics of the V.G. Micromass 622 and the Nuclide 3-60-RMS mass spectrometer, a sole source bid was made to V.G. Micromass. This was absolutely necessary since submission of, and the awarding of, the National Science Foundation grant was made in October 1976. Both companies indicated that a major price increase was going to occur the following year. Such an increase would have made it impossible to purchase such an instrument, hence a sole source bid was made to expedite procurement.

The Kearns Group

QUOTATION

DATE September 10, 1976

Dr. Elizabeth K. Ralph
 University of Pennsylvania
 Radio Carbon Laboratory
 Rittenhouse Lab BW-4
 Walnut Street
 Philadelphia, PA 19174

OUR QUOTATION NO. 760910-R

YOUR REFERENCE NO.

| ITEM | QUANTITY | DESCRIPTION | UNIT PRICE | EXTENSION |
|------|----------|---|-------------|-----------|
| 1 | 1 each | <p>VG MICROMASS ISOTOPE RATIO MASS SPECTROMETER for gas isotope ratio measurements. Specially designed double collector, 90° magnetic mass spectrometer of 6cm radius for the precision measurement of isotopic ratios of ¹³C, and ¹⁸O. with 2 Sigma-10 precision of 0.5 per mil. on delta enrichment values for N₂ and CO₂. Dual volume inlet system not truly independent, simple ratio system with DVM output, printer optional accessory. Instrument would be specially modified MM602C with the following differences from brochure 02.214:</p> <p>ANALYZER: Type A analyzer as described.</p> <p>INLET SYSTEM: Modified inlet system will have fixed volume for standard and variable volume for sample. No automatic change over. Rotary pump evacuation. Suggested sequence of operation: Fill with standard, fill with sample, measure standard, measure sample. Fill with next sample, and so on.</p> <p>VACUUM SYSTEM: Analyzer HV system only with Diffusion Pump.</p> <p>RATIO MEASUREMENT: Modified ratio system purely analog but without recorder bridge.</p> <p>ELECTRONIC CONSOLE: Ratio unit, with 4 digit DVM readout programmed power supply with limited source monitor facilities. Special scan module and all above electronics to be mounted into pump bench, and not a separate cabinet.</p> <p>VACUUM INSTRUMENTATION: Similar to present.</p> <p>PAYMENT TERMS: \$6,750.00 with order \$6,750.00 within 60 days \$6,750.00 upon shipment \$2,250.00 upon installation \$7,400.00 within 6 months of receipt of order.</p> | \$29,900.00 | |

QUOTATIONS FIRM FOR 60 days

TERMS AS above

Estimated duty: \$2,700.00

SHIPMENT FOB New York, New York

BY: *Thomas P. Reynolds*
 Thomas P. Reynolds
 FOR FURTHER INFORMATION CONTACT:

November 15, 1976

923-6606

Mr. Richard Sharp
254 Public Ledger Building
5th and Chestnut Sts.
Philadelphia, Pa. 19106

Dear Mr. Sharp ("Tiger"),

Copies of forms are enclosed to obtain a docket number
for duty-free import of the Model 622 Micromass spectrometer.

If you need more information, please let me know. Please
send the bill to this address c/o Radiocarbon.

I enjoyed the flowers that you sent to Ellen Kohler
some years ago.

Sincerely yours,

EKR

Elizabeth K. Ralph

EKR:emd
Enclosure

Tel. 243-8168

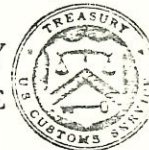
NOTICE -- CUSTOMS OFFICIALS

To receive notice of final disposition from Department of Commerce, remove, complete, and forward.

UNITED STATES GOVERNMENT

Memorandum

DEPARTMENT OF THE TREASURY
UNITED STATES CUSTOMS SERVICE
WASHINGTON, D. C. 20229



DATE:

FILE: DEC 1 1976

TO : Special Import Programs Division
U.S. Department of Commerce
Office of Import Programs
Washington, D. C. 20230

FROM :

SUBJECT: Form DIB-338P requesting duty-free entry of merchandise under item
851.60, TSUS -- Customs Application # 77-00056

Please send notice of Approval or Denial of the subject application directly to this port.

PORT

ENTRY NO.

DATE

NOTICE --CUSTOMS OFFICIALS

| | | | |
|---|--|--|--|
| FORM DIB-338P (Formerly OIPF-768) (2-75) U.S. DEPARTMENT OF COMMERCE DOMESTIC AND INTERNATIONAL BUSINESS ADMINISTRATION BUREAU OF RESOURCES AND TRADE ASSISTANCE AND U.S. DEPARTMENT OF TREASURY U.S. CUSTOMS SERVICE REQUEST FOR DUTY-FREE ENTRY OF SCIENTIFIC INSTRUMENTS OR APPARATUS | | 1. Name of applicant institution University of Pennsylvania | |
| | | 2. Address (Street, City, State, Zip Code) Department of Physics DRL/E1 209 S. 33rd St. Philadelphia, Pa. 19174 | |
| Mail application to: United States Customs Service Attention: Classification and Value Washington, D.C. 20229 | | FOR USE ONLY BY DEPARTMENT OF COMMERCE Docket number | |
| FOR USE ONLY BY UNITED STATES CUSTOMS SERVICE | | ACCEPTED FOR TRANSMITTAL TO THE DEPARTMENT OF COMMERCE DEC 1 1976 Date Director, Tariff Classification Rulings U. S. Customs Service | |
| Date received by Customs DEC 1 1976 | Customs' application number 77-00056 | | |
| INSTRUCTIONS: This application is to be completed and submitted in accordance with Department of Commerce Regulations, INSTRUMENTS AND APPARATUS FOR EDUCATIONAL AND SCIENTIFIC INSTITUTIONS. Review the Regulations prior to preparation of your application. Questions should be directed to the U.S. Customs Service (202 964-5864) or to the Department of Commerce (202 967-3971), as appropriate. Additional space will be required to answer several questions. Provide such answers on separate sheet(s), identify question being answered, and attach to this form. All questions must be answered completely or, if not, a statement explaining reasons must be provided. NOTE: Incomplete applications shall be returned without processing. | | | |
| 3. a. This is a nonprofit institution established for: <input checked="" type="checkbox"/> Scientific purposes <input checked="" type="checkbox"/> Educational purposes b. Supply proof of Internal Revenue Service nonprofit status, or in the absence thereof, other proof of nonprofit status. | | | |
| 4. This application is: <input checked="" type="checkbox"/> an original application. <input type="checkbox"/> a resubmission of Docket Number(s) _____; _____. | | | |
| 5. Description of the article and accompanying accessories, for which duty-free entry is requested. | | | |
| a. Identify basic article (e.g., Electron Microscope, Ultramicrotome, etc.): <u>Mass Spectrograph, Micromass Model 622</u> | | | |
| b. Identity of the foreign manufacturer and country of manufacture of article: <u>V.G. Micromass, Nat Lane, Winsford, Cheshire CWF Bx, ENGLAND.</u> | | | |
| c. Description: (Check appropriate box and provide requested information. All articles and accessories must be listed under 1(a), 2(a), or 3(a) below; attachment of purchase order, catalog, etc., which also may be required, does not satisfy this specific requirement.) | | | |
| <input type="checkbox"/> (1) Commercially standard catalogued instrument or apparatus (accessories). | | | |
| (a) List the article and each accompanying accessory according to the foreign manufacturer's nomenclature and type or model number. | | | |
| (b) Attach the foreign manufacturer's literature (or facsimiles thereof) which describes the article (accessories) and specifies the structural, operational, performance and other characteristics of the article (accessories). | | | |
| <input checked="" type="checkbox"/> (2) Special-order variant of standard catalogued instrument or apparatus, which has been significantly modified according to applicant's specifications, with respect to structural, functional and/or performance characteristics. | | | |
| (a) List the article and each accompanying accessory according to the foreign manufacturer's nomenclature and type or model number. | | | |
| (b) Attach a copy of applicant's specifications describing the required modifications. | | | |
| (c) Attach a copy of the literature describing the foreign article when sold as a standard instrument or apparatus. | | | |
| (d) Indicate the extent to which each of the performance specifications applicable to the standard equipment or apparatus have been increased or decreased, if the modifications resulted in a change in the original performance parameters. -attached- | | | |
| <input type="checkbox"/> (3) Article custom-made entirely to applicant's specifications. | | | |
| (a) List the article and each accompanying accessory according to standard nomenclature. | | | |
| (b) Attach a copy of applicant's specifications. | | | |
| (c) Attach a statement from the foreign manufacturer indicating whether the article fulfills applicant's specifications described in (b) above, or the extent to which the article deviates from these specifications. | | | |

6. Applicant has:

- already placed a bona fide order for the article 9/24/76 (Attach order and documents referenced therein.)
(Date of order)
- a firm intention, in event of favorable action on this application, to place a bona fide order for the article within the time specified by law.

7. Purposes for which article (accessories) is intended to be used. (Provide details on separate sheet(s).)

- a. Description of research purposes **-attached-**
- (1) The identity of the materials or phenomena to be studied.
 - (2) The properties of the materials or phenomena to be investigated.
 - (3) The experiments to be conducted.
 - (4) The objectives pursued in the course of the investigations.
 - (5) The techniques used in employing the article (accessories) in achieving the objectives.
 - (6) Other relevant information.
- b. Description of educational purposes **-attached-**
- (1) Name and content of course(s) in which article (accessories) will be used.
 - (2) Length of course(s).
 - (3) Number of students and educational level of students for each listed course.
 - (4) Objective(s) of course(s).
 - (5) Techniques used in employing article (accessories) in achieving educational objectives.
 - (6) Other relevant information.
- c. Specify primary scientific field in which article (accessories) will be used for research and/or educational purposes (e.g., *chemistry, biology, etc.*).

Justification for duty-free entry of article. (Regardless of the answers to parts a. and b., c. is to be answered in its entirety.)

- a. Is there an instrument, apparatus, or accessory of the same general category as the article being manufactured in the United States? **-attached-**
- b. Is there an instrument, apparatus or accessory not of the same general category as the article being manufactured in the United States which may be utilized for the purposes described in Question 7? **-attached-**
- c. Justification of non-equivalency. **-attached-**
- (1) Identify the domestic manufacturer(s) and the respective type or model number(s) of the instrument(s) or apparatus with which the article has been compared.
 - (2) List the structural, performance and other characteristics of the article that you consider pertinent for your intended purposes which are not possessed by the most closely comparable domestic instrument(s) or apparatus.
 - (3) Relate each characteristic listed in (2) above to one or more purposes described in Question 7, by explaining why either (a) the availability of the characteristic permits you to accomplish the relevant purpose(s) that otherwise could not be achieved without the characteristic or, (b) the characteristic permits you to carry the relevant purpose(s) further than can possibly be carried with the similar characteristic of the domestic instrument(s) or apparatus.
- d. If excessive delivery time of domestic instrument(s) entered into decision to purchase the foreign article, answer (1), (2) and (3) below. (Check (4) below if excessive delivery time was not a consideration.)
- (1) State the shortest delivery time quoted by any domestic manufacturer of an instrument or apparatus comparable to the foreign article, from place of shipment to site where instrument or apparatus is to be delivered.
 - (2) State the delivery time quoted by the foreign manufacturer, from place of shipment to site where article is to be delivered.
 - (3) Explain why the delay in receiving a domestic instrument or apparatus of equivalent scientific value to the foreign article for the purposes described in Question 7, shown by the difference between (1) and (2) above, would seriously impair the achievement of these purposes.
 - (4) Excessive delivery time was not a consideration.

9. Description of efforts made by applicant to ascertain the availability of a domestic instrument or apparatus of equivalent scientific value to the foreign article, for the purposes described in Question 7.
- List names of domestic manufacturers contacted and indicate: **-attached-**
 - Means or method utilized to contact domestic manufacturer(s) and approximate dates of such contacts.
 - Whether domestic manufacturer(s) was (were) furnished with a description of your technical requirements, such as presented in Question 7.
 - Whether domestic manufacturer(s) was (were) requested to bid on an instrument or apparatus in the same technologically competitive class as the article (i.e., one capable of fulfilling the performance and other relevant specifications of the article) without reference to cost limitations, instructed to bid with reference to stipulated limitations on the cost of the instrument or apparatus. (Enclose copies of requests for bid and other relevant correspondence.)
 - Whether domestic manufacturer(s) replied to the invitation to bid with an offer either (a) to furnish a standard catalogued instrument or apparatus, or (b) to modify a standard catalogued instrument or apparatus to the extent necessary to meet the applicant's technical requirements. (Enclose copies of bid responses and other relevant correspondence.)
 - If no domestic manufacturers were contacted prior to deciding to purchase the article, indicate the basis for concluding that none of the instruments or apparatus of the same general category as the article, which were being manufactured in the United States, was scientifically equivalent to the article for the purposes described in Question 7.
 - Enclose copies of request for bid, bid response, and any other relevant correspondence between applicant and the foreign manufacturer of article. **-enclosed-**

10. U.S. Customs Service Entry Information

- If article has entered the Customs Territory of the United States, indicate
 - Port of Entry
 - Date of Entry
 - Consumption Entry Number
 - Customs District
- If article has not entered the Customs Territory as of the date of this application, so specify by checking the following box .

NOTE: When entry of the article (accessories) is made, the information requested in a. above should be forwarded to: Director, Special Import Programs Division, Room 6886C, Domestic and International Business Administration, U.S. Department of Commerce, Washington, D.C. 20230. The Customs broker or U.S. sales agent for the foreign manufacturer should be able to provide the Customs Entry Information to the applicant or the Department of Commerce.

11. If delivery of the article (accessories) to the applicant precedes the submission of this application, supply appropriate serial number(s).

12. **CERTIFICATION** - The applicant is informed and believes that no instrument or apparatus of equivalent scientific value for the purposes stated in reply to Question 7 above, is being manufactured in the United States.

The above named applicant requests that this application for duty-free importation under the Educational, Scientific, and Cultural Materials Importation Act of 1966 (80 Stat 897), P.L. 89-651) be approved and certifies that all statements in this application are true or believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any duty-free importation entered thereon.

| | |
|---|------------------------------|
| Typed name and title of official under whose direction and control the foreign article will be used Elizabeth K. Ralph, Research Associate | Area code 215 |
| | Telephone number 243-8168 |
| Signature <i>Elizabeth K. Ralph</i> | Date 11/12/76 |
| 13. Typed name and title of fiscal officer of institution Mr. Robert M. Ferrell, FBA/16 | Telephone number 243-7216 |

NOTE: All official correspondence concerning this application shall be addressed to the official under whose control the article will be used unless applicant specifies that such correspondence be addressed to the fiscal officer named above.

To Fiscal Officer



U.S. DEPARTMENT OF COMMERCE
Domestic and International Business
Administration
Washington, D.C. 20230

January 4, 1977

University of Pennsylvania
Attention: Ms. Elizabeth K. Ralph
Department of Physics
DRL/E1--209 S. 33rd Street
Philadelphia, Pennsylvania 19174

Re: Docket Number 77-00056; Request for Duty-Free Entry of a Mass Spectrograph, Micromass Model 622

Gentlemen:

Pursuant to Section 301.9(a) of the Department's regulations as amended (15 CFR 301), the notice of application for duty-free entry of the above article was published in the FEDERAL REGISTER on December 30, 1976.

The processing of your application is progressing in accordance with the applicable provisions of the regulations. You will be notified of our decision on your application as soon as it is made. Any questions which you may have regarding the status of your application should cite the Docket Number and be addressed to: Special Import Programs Division (Room 6886C), Domestic and International Business Administration, U. S. Department of Commerce, Washington, D. C. 20230, or call area code 202 377-3971.

Sincerely,

Richard M. Seppa
Director
Special Import Programs Division



UNIFORM STRAIGHT BILL OF LADING
 THIS SHIPPING ORDER must be legibly filled in, in Ink, in Indelible Pencil, or in Carbon, and retained by the Agent.

04-24415

PINTO TRUCKING SERVICE INC.

1414 CALCON HOOK ROAD
 PHARON HILL, PA. 19079

77
 [3/11/77]

Shipper's No
 Agent's No

Company

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading.

At JFK **19** From CHECK BILL TO

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

| | |
|--|--|
| SHIPPER <u>WCCI</u> <u>(WILSONS)</u> | CONSIGNEE <u>U.O.A PENN</u> |
| STREET <u>149-10 183rd St.</u> | STREET <u>209 S. 33rd St.</u> |
| CITY <u>Jam</u> STATE <u>N.Y.</u> ZIP | CITY <u>Phc</u> STATE <u>Pa</u> ZIP |

FILL IN IF OTHER THAN SHIPPER OR CONSIGNEE TO BE BILLED

| NAME | ADDRESS | CITY | STATE | ZIP |
|------|---------|------|-------|-----|
|------|---------|------|-------|-----|

| | | |
|---|------------------|--------------------------------------|
| PINTO DRIVER | FROM <u>JFK</u> | TO <u>Phc</u> |
| A/W/B NO. | 2nd PINTO DRIVER | TO |
| IF TRANSFERRED TO ANOTHER CARRIER FOR LOCAL DELIVERY: | | |
| CARRIERS NAME | ADDRESS | CITY & STATE |
| IF COLLECT BILL OF LADING | | IF PREPAID BILL OF LADING |
| ADVANCE PINTO CHARGES | | PROTECT CHARGES (DELIVERING CHARGES) |

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

| CUST. NO. | FROM | TO | 1st. DRV. AMOUNT | 2nd DRV. AMOUNT | 3rd. AMOUNT DRV. |
|-----------|------|----|------------------|-----------------|------------------|
| | | | | | |

| NO. PACKAGES | DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS | *WEIGHT (Subject to Correction) | CLASS or RATE | CHECK COLUMN | Signature of Consignor |
|--------------|---|---------------------------------|---------------|--------------|------------------------|
| <u>3</u> | <u>Spectro Meter</u> | <u>1566</u> | <u>54.03</u> | | |
| | <u>DNB 14691316</u> | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

PREPAID

COLLECT

C.O.D. FOR NAME

AMOUNT

PROTECT CHARGES FOR NAME

AMOUNT

PROOF OF DELIVERY REQUIRED ON CONNECTING CARRIER DELIVERIES

| | | |
|----------------|------------------------------|--------------|
| TRANSFER PT. | TRANSFER PT. | TRANSFER PT. |
| NO. OF PKGS. | NO. OF PKGS. | NO. OF PKGS. |
| CHECKER | CHECKER | CHECKER |
| CONSIGNEE NAME | SIGNATURE <u>[Signature]</u> | |

AMOUNT

DRIVER COLLECT

AMOUNT

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "Carrier's or shipper's weight."
 Note.—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
 Value agreed to be \$50.00 per shipment of 50¢ per pound unless excess value declared.
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$.....per.....

RECEIVED PINTO DRIVER [Signature]

ORIGINATING DISPATCHER APPROVAL [Signature]

RECEIVING DISPATCHER APPROVAL [Signature]

AGENT MUST DETACH AND RETAIN THIS SHIPPING ORDER AND MUST SIGN THE ORIGINAL BILL OF LADING

No. 24415

SHIPPERS COPY [Handwritten]

THE FIBRE BOXES used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of Rule 41 of the Consolidated Freight Classification.

FLITE LINE SERVICE INC.
PHILA. INTERNATIONAL AIRPORT
365-7350
AIR FREIGHT DOMESTIC AIRBILL
NON-NEGOTIABLE

RECEIVED BY CARRIER AT:
 SHIPPER'S DOOR
 CITY TERMINAL
 AIRPORT TERMINAL
 ROUTING: AIRLINE ROUTING APPLIES UNLESS SHIPPER INSERTS SPECIFIC ROUTING HERE

CHARGES
 PREPAID
 COLLECT

LETTERS SIGNIFY AIRPORT OF DEPARTURE

FL PHL 36805

DELIVERY will be made to the consignee at a point where delivery service is available unless instructions to deliver to city terminal or airport terminal are specified in "Instructions to carrier" below.

IMPORTANT: Carrier will complete all items below bold line EXCEPT SHIPPER'S C.O.D. Weights and classifications are subject to correction.

FROM: SHIPPER **WECI (Wilson's)** TO: CONSIGNEE **UNIV. OF PENNA.**
 STREET ADDRESS **149-10 183RD ST.** STREET ADDRESS **209 S. 33RD ST.**
 CITY **Jamaica N.Y.** CITY **PHILA PA.** STATE **PA.** ZIP CODE
 BY: SHIPPER OR SHIPPER'S AGENT SHIPPER'S NUMBER DESTINATION AIRPORT CODE CONSIGNEE'S NUMBER
471: DR. RAJAH

RECEIVED IN GOOD ORDER AND CONDITION EXCEPT AS NOTED ON REVERSE SIDE:

x **Jellom Klein** (DATE) **3/14/77** (TIME) **1100** A. M.
 (CONSIGNEE OR CONSIGNEE'S AGENT SIGNATURE)

| PREPAID CHARGES | COLLECT CHARGES |
|------------------------------------|-----------------|
| INSURANCE \$ | \$ |
| WEIGHT-RATE | |
| WEIGHT-RATE | |
| WEIGHT-RATE | |
| PICKUP | |
| DELIVERY | 40.72 |
| EXCESS VALUE TRANSPORTATION CHARGE | |

| NO. PCS/PKGS. | DESCRIPTION OF PIECES AND CONTENTS MARKS - PACKING - NUMBER | WEIGHT | COMMITTY GRP. NO. | ROUTING | | RATE |
|---------------|---|--------|-------------------|---------|-----|------|
| | | | | TO | VIA | |
| 3 | SPECTROMETER 1566 | | | | | |
| | AMB# 14691316 | | | | | |
| | REF PINTO BK 04-24415 | | | | | |
| | INSTRUCTIONS TO CARRIER 94.25 | | | | | |

DECLARED VALUE: agreed and understood to be not more than the value stated in the governing tariffs for each pound on which charges are assessed unless a higher value is declared and applicable charges paid thereon.

DECLARED VALUE \$

AMT. COLL. \$

ADVANCES PINTO 54.03

PCB/PKGS. LENGTH WIDTH DEPTH CU. IN. DIMENSIONAL WGT. LBS. SHIPPER'S C.O.D.
 X X = DATE 3-14-77
 EXECUTED BY (AGENT'S SIGN.) **Joe Prunty** TIME 1100 A. M.
 AT PHL 36805 **94.75** P. M. TOTAL CHARGES \$ 94.75

LETTERS SIGNIFY AIRPORT OF DEPARTURE
 PRINTED IN U.S.A.

FORM FL-1

2. CONSIGNEE'S MEMO (NOT AN INVOICE)

CHANGE IN ORDER

C.O. No.

To: THE KEARNS GROUP
511 MAIN ST
FORT LEE N J 07024
ATT MR JERRY KEARNS

From: PURCHASING DEPARTMENT
University of Pennsylvania
3451 Walnut St.
Philadelphia, Pa. 19174
Tel: (215) 243-7216

Date: 1-28-77

REFER TO OUR PURCHASE ORDER NO.

15463 9-24-76

PLEASE REFER TO THE ABOVE P O NUMBER
AND CORRECT TOTAL PRICE OF THE ABOVE
ORDER TO READ AS FOLLOWS:

FROM \$ 22,500.00 TO \$ 27,500.00
CODING FOR ADDITIONAL \$ 5000.00 IS:
2-11039-260

For:

DEPARTMENT

PHYSICS EAR 76-14258

ACCOUNTING CODE

5-26616-260
2-11039-260 (ADD \$5000.00)

REQ # 77-2

Trustees of the University of Pennsylvania

DEPT. COPY

Purchasing Agent

| DATE | CODE | CLASS | DEPT. NO. | ACCOUNT | JOB NO. | REQ. NO. |
|---------------------|------|-------|-----------|---------|---------|----------|
| 9/24/76 R-22500. | 44 | 6 | 28536 | 260 | | 77-2 |

TO THE KEARNS GROUP
511 MAIN STREET
FORT LEE N J 07024
ATT MR JERRY KEARNS
209 S 33RD ST - DR E RALPH (X8168)

Deliver to

ORDER NO. 15463

1. INVOICE IN DUPLICATE TO UNIVERSITY OF PENNSYLVANIA PURCHASING DEPARTMENT PHILADELPHIA, PA. 19174 Telephone 243-7216
2. Refer to this number on all invoices, packages, and correspondence.
3. No changes to this order unless authorized by the Purchasing Dept.
4. See terms and conditions on reverse side.

DEPARTMENT PHYSICS CHAIRMAN'S FUND EAR 76-14258 SHIPPING INSTRUCTIONS

| | EST. COST |
|---|-----------|
| <p>1 MODEL 622 (FORMERLY MODIFIED 602C) MICROMASS MASS SPECTROGRAPH PAYMENT TERMS: 30% (OF 22500.00) PAYMENT UPON RECEIPT OF ORDER 30% WITHIN 60 DAYS 30% AT TIME OF DELIVERY (APPROXIMATELY 4 MONTHS) 10% WHEN WE ARE SATISFIED THAT IT IS WORKING WELL AS PER QUOTATION TO DR RALPH PLEASE INVOICE IN ACCORDANCE WITH THE ABOVE MENTIONED TERMS SHIP PREPAID</p> | 22500.00 |

Wilson Custom Clearance

BOX 103
CONSUMPTION ENTRY
 UNITED STATES CUSTOMS SERVICE

32562628
 PIR 3/31

RECORD COPY
 CASHIER'S COPY

| | | | |
|---|-----------------------|---------------------------------|--------------------|
| This Space For Census Use Only | | This Space For Customs Use Only | |
| BLOCK AND FILE NO. | M.O.T. | ENTRY NO. AND DATE | |
| | MANIFEST NO. | K285701 | |
| FOREIGN PORT OF LADING | U.S. PORT OF UNLADING | Dist. and Port Code | Port of Entry Name |
| | | 4701 | NEW YORK (JFK) |
| Importer of Record (Name and Address) | | Term Bond No. | |
| THE KEARNS GROUP 58 BUCKINGHAM DR., STAMFORD CONN 06902 | | S/E | |

For Account of (Name and Address)
 SAME

| | | | |
|------------------------------------|---------------------|----------------------------|---------------------------|
| Importing Vessel (Name) or Carrier | B/L or AWB No. | Port of Lading | I.T. No. and Date |
| BA 461 | 14691316 | LONDON | |
| Country of Exportation | Date of Exportation | Type and Date of Invoice | I.T. From (Port) |
| ENGLAND | 3-9-77 | COMV 2-28-77 | |
| U.S. Port of Unlading | Date of Importation | Location of Goods-G.O. No. | I.T. Carrier (Delivering) |
| NEW YORK (JFK) | 3-9-77 | BA ID#3588150 3-10-77 | |

| MARKS & NUMBERS OF PACKAGES COUNTRY OF ORIGIN OF MERCHANDISE (1) | DESCRIPTION OF MERCHANDISE IN TERMS OF T.S.U.S. ANNO., NUMBER AND KIND OF PACKAGES (2) | | ENTERED VALUE IN U.S. DOLLARS (3) | T.S.U.S. ANNO. REPORTING NO. (4) | TARIFF OR I.R.C. RATE (5) | DUTY AND I.D. TAX (6) |
|--|--|---|-----------------------------------|----------------------------------|---------------------------|-----------------------|
| | GROSS WEIGHT IN POUNDS (2a) | NET QUANTITY IN T.S. U.S. ANNO. UNITS (2b) | | | | |
| ADDR | THREE(3) CTNS | MASS SPECTROMETER FOR SCIENTIFIC & EDUCATIONAL PURPOSES | NOT RELATED | | | |
| | 1566# | | 22960 | 851.6000 | free | * free |
| | | | pext chg | 22960 | | |
| | | | inv val | 22960.- | | |
| | | | ent val | 22960.00 | | |
| | DUTY FREE APPLICATION ATTACHED #770-00056 | | | | | |
| | ST PAUL FIRE & MARINE INS CO NEW YORK NEW YORK | | | | | |
| | c/o ENGLAND | | | | | |

MISSING DOCUMENTS
 NONE

Regional Commission OF CUSTOMS
 MAR 21 1977

THIS SPACE FOR CUSTOMS USE ONLY

DEPT. OF COMMERCE
 DENIAL - 1-11-78 ATTACHED

full duty bill \$2296.00

CF 29/1/17/78

I declare that I am the principal consignee and that the actual owner for customs purposes is as shown above, or consignee or agent of the consignee. I further declare that the merchandise was or was not obtained in pursuance of a purchase or agreement to purchase. I also include in my declaration all the statements in the declaration on the back of this entry.

THE KEARNS GROUP 3-17-77 LR
WILSONS CUSTOM CLEARANCE INC.
 L. MAZZIOTTI DES. RHP

DATE _____ (Signature)
 _____ (Address)

Principal
 Member of the firm.
 _____ of the corporation.
 Authorized agent (Title)

UNIVERSITY of PENNSYLVANIA

PHILADELPHIA 19104

The Faculty of Arts and Sciences

DEPARTMENT OF PHYSICS

February 2, 1978

Mr. Richard M. Seppa, Director
Special Import Programs Division
U.S. Department of Commerce
Domestic and International Business Administration
Washington, DC 20230

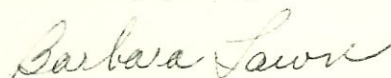
RE: Docket No. 77-00056

Dear Mr. Seppa:

As we were denied duty free status for the above docket number (and are not appealing) we would like to know how to go about receiving the bill for the necessary duty, so that it can be paid before the end of our fiscal year (6/30/78).

Thank you for your prompt attention.

Sincerely yours,



Barbara Lawn
Radiocarbon Laboratory

BL:wf

Enclosure



April 21, 1977

MEMORANDUM FOR Mr. Richard M. Seppa
Director, Special Import Programs Division
Office of Import Programs

From: James N. Strohlein *James N. Strohlein*
Instrument Shops Division

Subject: Application of University of Pennsylvania for Duty-Free Entry
of Mass Spectrometer Model 622; Docket No. 77-00056

APR 22 4 15 PM '77
SPECIAL IMPORT PROGRAMS DIVISION

The subject application and attached documents have been reviewed. We are informed that no comment has been received in response to publication in the Federal Register of the notice of application.

The applicant intends to use the foreign article, a mass spectrometer, for measuring the ^{13}C - ^{12}C stable isotopic ratios of carbon in the form of CO_2 . ^{13}C - ^{12}C will be measured as a check on fractionation of natural ^{14}C in plants and other carbon compounds as well as possible laboratory fractionation in the course of processing the samples. The article will also be used for educational purposes.

The applicant claims the following specifications as pertinent to his intended purposes and not available in a domestic instrument:

- (a) Vacuum - 10^{-9} torr range
- (b) Accelerating voltage - 5000 volts
- (c) Minimum sample size - 0.025 atm. cm^3

Our findings on pertinency follow:

We make no finding on the pertinency of (a) above, as the term "10-9 torr range" is ambiguous. We find that the specification of a capability of at least 10^{-9} torr is pertinent to the applicant's intended use.

We make no finding on the pertinency of (b) and (c) above, as we find that the Nuclide Corporation was, at the time of order (9-24-76) of the foreign article, able to provide instruments capable of satisfying these specifications.

We find, further, that the foreign article satisfies the pertinent specifications.

We note that the applicant ordered a special order variant and compared it to a standard instrument available from the Nuclide Corporation. We further note that relative to the sample inlet system, there is no evidence that the applicant obtained a sample inlet system equivalent to the specification. The information available indicates only that the inlet system was modified "for standard and variable volume for sample." With no indication of maximum or minimum sample size. ? 1

For purposes of evaluation of scientific equivalency, we compare the foreign article to the model 6-60 RMS available from Nuclide. The 6-60-RMS is a 5 kV instrument capable of producing a vacuum of better than 10^{-9} torr. Further, had the applicant requested Nuclide to supply an instrument to their specifications, they would have found that Nuclide could have provided an instrument with the minimum sample size claimed pertinent by the applicant.

We find the Nuclide 6-60-RMS to be scientifically equivalent to the foreign article for the applicant's intended use.

Enclosure



NUCLIDE CORPORATION
NUCLIDE ANALYSIS ASSOCIATES

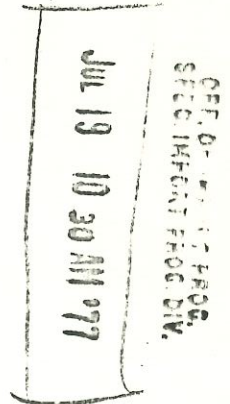
642 EAST COLLEGE AVENUE • STATE COLLEGE, PA 16801 • PHONE: (814) 238-0541 • TWX. (510) 670-3510

April 28, 1977

S.I.P.D.
Room 6886C
Dept. of Commerce
14th and Constitution Ave.
Washington, D.C. 20230

ATTN: Joseph Griffin

RE: Docket 7700056
Micromass Model 622



Gentlemen:

This application for duty-free entry has just come to our attention.

It is our understanding that the VG Micromass 622 is a "simplified" version of their model 602C, especially as regards the inlet system, and accordingly provides a lower level of ultimate performance with respect to the precision with which $^{13}\text{C}/^{12}\text{C}$ (as CO_2) ratio differences can be measured.

Under 7a Applicant appears to indicate that its "special" design features are given in "VG quotation No. 760910-R - attached". We do not have a copy of this quotation so it is difficult to compare the instrument with ours in detail at this time as to features.

Also, Applicant does not include any isotope ratio difference measurement precision, reproducibility or accuracy specification. However, according to notes our Dr. L. F. Herzog made on a conversation with Dr. Ralph, the guaranteed precision of the 622 is less than that achievable with the Micromass 602C. Therefore it is less than that achievable with either the Nuclide 3-60-RMS, 6-60-RMS or 12-90-RMS.

Under 8c Applicant makes several erroneous statements about our 3-60-RMS in comparison to the purchased foreign instrument.

8c(1): Concerns price, which we realize is not relevant to scientific equivalency, and thus need not be discussed. However, parenthetically we wish to note that in the absence of detailed specifications of the VG 622 it is not possible for Applicant to state definitely that Nuclide could not have offered a scientifically-equivalent system at the same price. It is in fact our belief based on information at hand that Nuclide could have offered a fully equivalent instrument at a lower price. *Not true*

8c(2) a) b) c): All of the statements made with respect to "Nuclide" in these sections are incorrect since for at least 15 years we have offered instruments which would meet or exceed the specifications listed for "VG Micromass". *Mostly shut down*

Specifically as regards the 3-60-RMS, it is true that the 1976 version standard instrument had a maximum ion acceleration voltage of 4100 V - however (1) both 5,000 V and 10,000 V were offered as options and (2) since the standard 3-60-RMS has an electromagnet, whereas (we believe, on the basis of the 602C's specifications) the VG 622 has a permanent magnet, one could in fact run CO₂ at a higher voltage (4,000V) with the 3-60 than with the VG instrument (ea. 2600 V if it is desired to also be able to observe N₂ at mass 28).

In the case of Nuclide's inlet system as well as VG's (per their 602 literature), the "small sample" CO₂ inlet reservoir implied by c) is an option.

8c(2): It is very difficult to comment on this statement since, although asserting it is "almost completely changed from the standard type", Applicant does not describe the VG 622 inlet in detail. In the above-referenced conversation with the Applicant, we formed the impression that this is not a "dual" inlet, and if so, it is quite possibly similar to several of Nuclide's less-expensive inlets (compared to dual inlets).

As regards digital output, it is a standard option of all Nuclide ratio instruments and can be used without the recorder and balance panel, which indeed need not be purchased if the valuable intercheck on the digital ratios they present is not desired, or funds are limited.

9a(2, 3): Nuclide personnel had been discussing the University's upcoming requirement for many months prior to this purchase. Most of our contacts were with Dr. Jeffrey Klein. We learned about the purchase of the VG after the fact. In a call to Dr. Klein, we learned that an order either had been placed or was about to be placed by Dr. Ralph. Immediately, therefore our Dr. L. Herzog phoned Dr. Ralph, who stated that the order had been

placed. Dr. Herzog's notes on the conversation indicate that he formed the impression the principal reason was not price or technical specifications but the fact that Dr. Ralph had attended a carbon-14 meeting in the summer and at that meeting had encountered several persons who were using the Micromass 602C successfully for work similar to or identical to that which she intended to apply the instrument to be purchased.

In summary, on the basis of the information in the application, it seems to us to be incontrovertible that at least three standard models of Nuclide isotope ratio mass spectrometers available at the time of Applicant's purchase could have provided $^{13}\text{C}/^{12}\text{C}$ ratio difference values with precision, reproducibility and accuracy better than those that the system purchased offers (assuming it is essentially a 602C with simplified inlet system and ratio-output system), and for samples at least as small as it can handle.

It is our belief that the sole-source procurement mechanism was used either (1) to avoid the possibility that Nuclide might be able to make a competitive bid (because the 622C had been decided upon for the reason given above) or (2) possibly because of pressure put on the Applicant by VG's U.S. Agent with respect to a possible price increase; (3) possibly Applicant obtained the erroneous data on the capabilities of Nuclide instruments presented in the Application from the same source and accepted same at face value without checking them due to the mentioned price-increase time pressure.

Sincerely,

John R. Kalasky
John R. Kalasky
Publications Manager



UNITED STATES DEPARTMENT OF COMMERCE
Domestic and International Business
Administration
Washington, D.C. 20230

December 20, 1977

University of Pennsylvania
Attention: Ms. Elizabeth K. Ralph
Department of Physics
DRL/E1-209 S. 33rd St.
Philadelphia, Pa. 19174

Re: Docket Number 77-00056; Request for duty-free entry of a Mass
Spectrograph, Micromass Model 622.
Gentlemen:

Enclosed is a copy of our decision on your application for duty-free entry of the above article issued pursuant to Section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Public Law 89-651) and implementing regulations as amended (15 C.F.R. 301). As provided in Section 301.11(d) of the regulations, a copy of the decision has also been transmitted to the FEDERAL REGISTER for publication which generally will occur within one week from the date of this letter.

We will notify the appropriate officials of the U.S. Customs Service when the enclosed decision becomes final: within 20 days after publication in the FEDERAL REGISTER with no appeal having been filed.

The Act and the regulations provide that an appeal may be taken to the Court of Customs and Patent Appeals. Questions regarding appeals should be addressed directly to the Court of Customs and Patent Appeals, Clerk's Office -- Room 401, 717 Madison Place N.W. Washington, D. C. 20439 or call 202 633-7214.

Sincerely,

Richard M. Seppa
Director
Statutory Import Programs Staff

Enclosure



DEPARTMENT OF COMMERCE
DOMESTIC AND INTERNATIONAL BUSINESS ADMINISTRATION
Office of Import Programs

NOTICE OF CONSOLIDATED DECISION ON APPLICATIONS
FOR DUTY-FREE ENTRY OF SCIENTIFIC ARTICLES

The following is a consolidated decision on applications for duty-free entry of scientific articles pursuant to Section 6(c) of the Educational, Scientific, and Cultural Materials Importation Act of 1966 (Public Law 89-651, 80 Stat. 897) and the regulations issued thereunder as amended (15 CFR 301).

A copy of the record pertaining to each of the applications in this consolidated decision is available for public review during ordinary business hours at the Department of Commerce, at the Special Import Programs Division, Office of Import Programs, Department of Commerce, Washington, D. C. 20230.

DECISION: Applications denied. Applicants have failed to establish that instruments or apparatus of equivalent scientific value to the foreign articles, for such purposes as the foreign articles are intended to be used, are not being manufactured in the United States.

REASONS: Subsection 301.8 of the Regulations provides in pertinent part:

"The applicant shall on or before the 20th day following the date of such notice, inform the Deputy Assistant Secretary whether it intends to resubmit another application for the same article for the same intended purposes to which the denied application relates. The applicant shall then resubmit the new application on or before the 90th day following the date of the notice of denial without prejudice to resubmission, unless an extension of time is granted by the Deputy Assistant Secretary in writing prior to the expiration of the 90-day period.

... If the applicant fails, within the applicable time periods specified above, to either (a) inform the Deputy Assistant Secretary whether it intends to resubmit another application for the same article to which the denial without prejudice to resubmission relates, or (b) resubmit the new application, the prior denial without prejudice to resubmission shall have the effect of a final decision by the Deputy Assistant Secretary on the application within the context of Subsection 301.11."

The meaning of the subsection is that should an applicant either fail to notify the Deputy Assistant Secretary of its intent to resubmit another application for the same article to which the denial without prejudice relates within the 20-day period, or fails to resubmit a new application within the 90-day period, the prior denial without prejudice to resubmission will have the effect of a final denial of the application.

None of the applicants to which this consolidated decision relates has satisfied the requirements set forth above, therefore, the prior denials without prejudice have the effect of a final decision denying their respective applications.

Subsection 301.8 further provides:

"... the Deputy Assistant Secretary shall transmit a summary of the prior denial without prejudice to resubmission, to the Federal Register for publication, to the Commissioner of Customs, and to the applicant."

Each of the prior denials without prejudice to resubmission to which this consolidated decision relates was based on the failure of the respective applicants to submit the required documentation, including a completely executed application form, in sufficient detail to allow the issue of "scientific equivalency" to be determined by the Deputy Assistant Secretary.

DOCKET NUMBER: 77-00056. APPLICANT: University of Pennsylvania, Department of Physics, DRL/E1--209 S. 33rd St., Philadelphia, Pa. 19174. ARTICLE: Mass Spectrograph, Micromass Model 622. DATE OF DENIAL WITHOUT PREJUDICE TO RESUBMISSION ON: August 4, 1977.

DOCKET NUMBER: 77-00058. APPLICANT: North Carolina State University, Department of Geosciences, Raleigh, North Carolina 27607. ARTICLE: Lightweight, portable, rock coring drill, Model GSC with standard equipment included. DATE OF DENIAL WITHOUT PREJUDICE TO RESUBMISSION ON: July 19, 1977.

DOCKET NUMBER: 77-00101. APPLICANT: Drake University, 26th & University Avenue, Des Moines, Iowa 50311. ARTICLE: Scanning Electron Microscope, Model S-500 HISCAN and accessories. DATE OF DENIAL WITHOUT PREJUDICE TO RESUBMISSION ON: July 19, 1977.

DOCKET NUMBER: 77-00193. APPLICANT: University of Rochester, Dept. of Biology, Rochester, New York 14627. ARTICLE: Ultrasonic Disintegrator, Model PG 100 and accessories. DATE OF DENIAL WITHOUT PREJUDICE TO RESUBMISSION ON: August 30, 1977.

RMS 12/15

Richard M. Seppa
Director
Special Import Programs Division

(Catalog of Federal Domestic Assistance Program No. 11.105, Importation of Duty-Free Educational and Scientific Materials.)

SIPD:bbs:12-9-77 *KS 12/14/77*

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