



**Manufacturers of IDENTIFICATION TAGS for**

**AGRICULTURE • HORTICULTURE • BIOLOGICAL • SCIENTIFIC RESEARCH**

**AIRCRAFT • RADIO • ELECTRICAL • MARINE • INDUSTRIAL USES**

**NATIONAL BAND AND TAG COMPANY**

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. U. S. A. • • Phone: Area 606 - 261-2035

UNIVERSITY OF HAWAII AT MANOA  
HAWAII INSTITUTE OF MARINE BIOLOGY  
P.O. Box 1346, COCONUT ISLAND  
KANEHOE, HAWAII 96744

APRIL 16, 1975

"OUR 73RD YEAR"

ATTN: GEORGE H. BALAZS, JR. MARINE BIOLOGIST

DEAR MR. BALAZS:

FOLLOWING UP OUR LETTER TO YOU DATED APRIL 2ND, I AM PLEASED TO REPORT THAT WE HAVE RECEIVED ENCOURAGING INFORMATION FROM THE NICKEL MILLS REGARDING AVAILABILITY OF THE INCONEL ALLOY. HOWEVER, IT WILL BE NECESSARY FOR US TO PURCHASE MATERIAL IN A MINIMUM QUANTITY SUFFICIENT TO PRODUCE 5000 SIZE 49 TAGS.

WE ARE ADVISED THAT THE INCONEL WILL BE OF AN IDENTICAL THICKNESS, WIDTH, EDGES, TEMPER AND WORKABILITY AS THE MONEL METAL THAT WE PRESENTLY USE IN OUR STANDARD PRODUCTION. THE INCONEL WHEN PURCHASED IN THE SMALL QUANTITIES IS ABOUT FOUR TIMES MORE EXPENSIVE THAN MONEL AND THIS RESULTS IN THE TAGS BEING PRICED OUT AT \$281.20 PER 1000 ON AN ORDER FOR 5000 PLUS A DIE ALTERATION CHARGE OF \$100.00 FOR THE FIRST ORDER. THIS PRICE IS F.O.B. OUR FACTORY AND INCLUDES TAGS WITH CONSECUTIVE NUMBERS AND LETTERING AS YOU WOULD REQUIRE.

IF THIS QUANTITY OF TAGS IS EXORBITANT FOR YOU, PERHAPS YOU COULD COMBINE YOUR REQUIREMENTS WITH THE REQUIREMENT OF ANOTHER AGENCY AS SUGGESTED IN YOUR LETTER DATED MARCH 18TH. IN THIS REGARD, WE HAVE BEEN HAVING CORRESPONDENCE WITH A MR. HUGHES OF:

NATAL PARKS, GAME AND FISH PRESERVATION BOARD  
P.O. Box/Posbus 662  
PIETERMARITZBURG 3200, REPUBLIC OF SOUTH AFRICA

WHO APPARENTLY IS ENGAGED IN VERY SIMILAR TURTLE RESEARCH PROGRAMS WITH THE USE OF OUR SIZE 49 TAGS. WE RECENTLY PROVIDED MR. HUGHES WITH YOUR NAME AND ADDRESS AND PERHAPS YOU WILL BE RECEIVING SOME WORD FROM HIM ON THIS SUBJECT. WE ARE ALSO ADVISING MR. HUGHES CONCERNING THE AVAILABILITY OF THE INCONEL TAGS.

PERSONALLY, I AM ENCOURAGED THAT THE NICKEL COMPANIES HAVE NOW MADE THE INCONEL ALLOYS AVAILABLE TO US IN SMALL QUANTITIES AS MANY PREVIOUS EFFORTS WERE DECLINED AFTER MUCH CONSIDERATION. IF THE INCONEL TAGS ARE AS CORROSIVE-PROOF AS THE NICKEL COMPANIES CLAIM THEY ARE, THESE TAGS SHOULD SOLVE MANY OF THE PROBLEMS THAT HAMPERED YOUR RESEARCH PROGRAM AS A RESULT OF THE DETERIORATION OF THE MONEL TAGS. WE WOULD REQUIRE ABOUT 8 TO 12 WEEKS FOR SHIPMENT OF AN ORDER OF INCONEL. EIGHT WEEKS ALONE WOULD BE NEEDED FOR PROCUREMENT OF THE MATERIAL.

LOOKING FORWARD TO THE RECEIPT OF YOUR COMMENTS AND EVALUATION OF OUR OFFER, WE REMAIN,

YOURS TRULY,

NATIONAL BAND AND TAG COMPANY

J. R. HAAS

JRH:Lc/2

THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.

COPY

NATAL PARKS, GAME & FISH PRESERVATION BOARD  
RAAD VIR DIE BEWARING VAN NATALSE PARKE, WILD EN VIS  
P.O. Box/Possus 662  
PIETERMARITZBURG 3200,  
REPUBLIC OF SOUTH AFRICA

APRIL 16, 1975  
"OUR 73<sup>RD</sup> YEAR"

AIR MAIL

ATTN: G. H. HUGHES, SR. PROFESSIONAL OFFICE FOR DIRECTOR

DEAR MR. HUGHES:

FOLLOWING UP OUR LETTER TO YOU DATED APRIL 3<sup>RD</sup>, I AM PLEASED TO REPORT THAT WE HAVE RECEIVED ENCOURAGING INFORMATION FROM THE NICKEL MILLS REGARDING AVAILABILITY OF THE INCONEL ALLOY. HOWEVER, IT WILL BE NECESSARY FOR US TO PURCHASE MATERIAL IN MINIMUM QUANTITIES SUFFICIENT TO PRODUCE 5000 SIZE 49 TAGS.

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IF THIS QUANTITY WOULD RESULT IN TOO LARGE A LOT FOR YOUR OWN USE, PERHAPS YOU COULD COMBINE YOUR USE WITH ANOTHER AGENCY SUCH AS:

UNIVERSITY OF HAWAII AT MANOA  
HAWAII INSTITUTE OF MARINE BIOLOGY  
P.O. BOX 1346, COCONUT ISLAND  
KANEONE, HAWAII 96744  
ATTN: GEORGE H. BALAZS, JR. MARINE BIOLOGIST

WHO WE MENTIONED TO YOU IN OUR PREVIOUS LETTER IS ENGAGED IN VERY SIMILAR RESEARCH WORK WITH TURTLES. WE HAVE PROVIDED MR. BALAZS WITH YOUR NAME AND ADDRESS AND PERHAPS YOU WILL BE HEARING FROM HIM ON THIS SUBJECT.

PERSONALLY, I AM ENCOURAGED THAT THE NICKEL COMPANIES HAVE NOW MADE THE INCONEL ALLOYS AVAILABLE TO US IN SMALL QUANTITIES AS MANY PREVIOUS EFFORTS WERE DECLINED AFTER MUCH CONSIDERATION. IF THE INCONEL TAGS ARE AS CORROSIVE PROOF AS THE NICKEL COMPANIES CLAIM THEY ARE, THESE TAGS SHOULD SOLVE MANY OF THE PROBLEMS THAT HAMPERED YOUR RESEARCH PROGRAMS AS A RESULT OF THE DETERIORATION OF THE MONEL TAGS. WE WOULD REQUIRE ABOUT 8 TO 12 WEEKS FOR SHIPMENT OF AN ORDER OF INCONEL TAGS. EIGHT WEEKS ALONE WOULD BE NEEDED FOR PROCUREMENT OF THE MATERIAL.

LOOKING FORWARD TO THE RECEIPT OF YOUR COMMENTS AND EVALUATION OF OUR OFFER, WE REMAIN,

YOURS TRULY,  
NATIONAL BAND AND TAG COMPANY

J. R. HAAS

JRH:LC/2

UNIVERSITY OF FLORIDA  
GAINESVILLE, 32611

COLLEGE OF ARTS AND SCIENCES  
DEPARTMENT OF ZOOLOGY

May 20, 1975

George Balasz  
George Hughes

Dear Messrs. George:

Please excuse the delay in my answering your letters about the new tags. Although our order for this year's supply of tags has gone in, it seemed until a couple of days ago that I would be able to find a few hundred dollars to buy into your deal, and we actually had typed an order for 2500 tags. Now, however, like many of the University of Florida's fiscal prospects, the expected funds appear to have dissolved, and I have no way to finance an advance order that would give you the help you need.

If my tags appeared to be suffering the fate yours are I would mortgage the house to get the new alloy. You will be surprised to hear, however, that I still don't see any sign of undue deterioration. What do you think the cause of this difference could be? We have been getting increasingly frequent returns of tags, mostly from the burgeoning (and clearly suicidal) Nicaraguan turtle processing plants. The tags come back from all years, and erosion is simply not dramatic.

What could the reason for the different reaction be? Indo-Pacific water chemistry? Indo-Pacific turtle-serum chemistry? If you get any ideas let me know. They might bear on the campaign to collect cryptic variations in Chelonia for conservation strategy.

Meanwhile I sincerely regret the impecuniousness that blocks my joining you in the order. If the chance to help recurs in a few months I may be better able to take advantage of it.

Best regards.

Sincerely yours,

  
Archie Carr

Graduate Research Professor

AC:gs



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Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

UNIVERSITY OF HAWAII AT MANOA  
Hawaii Institute of Marine Biology  
P.O. Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

June 6, 1975

"OUR 73rd YEAR"

Attn: George H. Balazs, Jr. Marine Biologist

*see  
Ascension IS.  
Copeia paper*

AIR MAIL

Dear Mr. Balazs:

Receipt is acknowledged of your letter dated May 30, 1975. I am sorry to learn of the difficulty in assembling a combination order of Inconel tags to qualify for the minimum of 5000. Originally, I thought that this would be a comparatively easy thing to do as various agencies are aware of the corrosion and I am sure if I dug into my files far enough I could locate a report of this sort from Dr. Carr's Florida or Caribbean research operations.

We did hear from Mr. Rene Marquez in Mexico, he recently inquired about the availability of 10,000 of the size 49 monel tags and we replied providing him with the availability and pricing he wanted on the monel tags and also filling him in on the up-to-date developments concerning the Inconel tags advising him of your and Mr. Hughes' addresses.

But now on June 2nd, we received an order for the 10,000 monel tags from Mr. Marquez and he makes mention that for the time being he is going to go along with the monel metal tags and apparently is not interested in the Inconel tags except in the smaller sizes. In addition, we received an inquiry from the United States Dept. of the Interior, Anchorage, Alaska and we also advised them of the Inconel tag development but so far have received no reply.

I repeat, I am a little bit surprised in the reaction we are getting concerning the availability of the Inconel tags as for the past few years, we have received consistent complaints regarding the corrosion and now that we have the opportunity to correct the condition, no one except yourself is apparently interested in taking any corrective action. I do believe that eventually the Inconel tags will be available and if it weren't for the initial expense of the material, we would be willing to go ahead and meet the supplier's minimum requirement and produce the 1000 or 2000 tags that you require but with the economy down such as it is and cash in short supply, it is difficult for us to justify having a stock of such expensive material in our warehouse with unknown production possibilities.

Incidentally, just this week we've been in contact by telephone with Dr. Carr's Gainesville office, he placed an order for immediate shipment which we hope we can meet for 5000 of the monel tags. While he expressed an interest in the Inconel tags, he said his current need could not wait on the Inconel delivery.

Yours truly,

NATIONAL BAND AND TAG COMPANY

J. R. Haas

THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS

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July 8, 1975

Mr. Rhett Talbert  
Baruch Institute  
University of South Carolina  
Columbia, S. C. 29208

Dear Mr. Talbert:

I have noted with interest the references in the newly assembled Loggerhead Newsletter concerning the need to "petition tag manufacturers to make a better tag for sea turtles." I assume that "better" refers, at least in part, to corrosion resistant properties. In this respect, you may be pleased to learn that National Band and Tag Company (721 York St., Newport, Kentucky, 41072) is presently willing to produce their size 49 self-piercing tag in a new alloy called Inconel. This material is believed to be considerably more stable than Monel and, hopefully, will solve some of the problems that longer-term research programs have experienced in certain areas of the world. Naturally the cost is higher, but certainly well worth the investment if the desired results are achieved. Also in order to produce this tag, National Band will need a minimum order of 5,000. I have been attempting to assemble a composite order from several workers in order to meet this qualification and perhaps one or more of your associates will be willing to act in this matter. For further information, it is suggested that direct inquiries be made to Mr. J. R. Haas at the address I have provided.

Sincerely,

GEORGE H. BALAZS  
Jr. Marine Biologist

GHB:ec

cc: H. Neuhauser  
P. Pritchard  
F. Lund  
C. LeBuff

bcc: J. R. Haas

July 8, 1975

Mr. J. R. Haas  
National Band and Tag Company  
721 York Street  
Newport, Kentucky 41072

Dear Mr. Haas:

Thank you very much for your letter of June 6. I have only recently returned from three weeks of field studies at our green sea turtle nesting site where several tags ranging up to eight years of age were recovered. As with previous recoveries, varying degrees of corrosion were apparent. An additional thought has come to mind in this matter, that is, I wonder if there have been any changes in the composition of the Monel that has been supplied to you over the years. It would appear that some of the older tags originally purchased and applied by U. S. Fish and Wildlife personnel are holding up far better than those put on during the past three years. At least four different orders were previously involved, as indicated by the different inscriptions. Any information you can obtain from the nickel producers on this subject would be greatly appreciated.

As indicated in the enclosed copied letter, I am still attempting to generate interest for Inconel.

Sincerely,

GEORGE H. BALAZS  
Jr. Marine Biologist

GHB:ec

Enclosure



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UNIVERSITY OF HAWAII AT MANOA  
Hawaii Institute of Marine Biology  
P.O. Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

August 29, 1975

"OUR 73rd YEAR"

Attn: George H. Balaze, Jr. Marine Biologist

Dear Mr. Balaze:

Thanks for your letter copy dated 8/22/75 to Dr. George Hughes in Pietermaritzburg. We have not heard any further word from Dr. Trillmich as of today. We recently completed an order for a few thousand monel tags for Dr. McFarland in Ecuador, and I believe I mentioned previously about the 10,000 monel order we completed for Mr. Marquez in Mexico.

We now have an order for 1,000 monel tags from Mr. Bob Delong, National Marine Fisheries Service, Marine Mammal Division, Building 192, Naval Support Activity, Seattle, Washington 98115, with whom I have spoken over the telephone 2 or 3 times in recent weeks providing him with the details on the inconel tags. Mr. Delong advises that corrosion is a minor problem in his operations but would possibly be interested in the inconel tags for future use, but for their immediate needs will utilize the monel tags.

While having this correspondence at hand, I am sorry that I have not responded earlier to your letter of July 8 containing a copy of a letter to Mr. Talbert in Columbia, S.C., also dated July 8. I have not had any word from Mr. Talbert and I was hoping if he was instrumental in publication of the Loggerhead Newsletter, that this would be an excellent avenue for dissemination of the inconel information.

In your July 8th letter to me you mentioned a subject that has been brought to our attention previously and which I have thoroughly discussed with the metal suppliers. We have been presented evidence from research agencies to substantiate the contention that monel tag corrosion appears more severely and frequently in tags produced in recent years when compared to tags produced 10, 12, 15 years ago. The metallurgists from the nickle alloy companies are unable to explain this phenomenon. The monel we use

Continued on Page 2

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UNIVERSITY OF HAWAII AT MANOA

Kaneohe, Hawaii 96744

August 29, 1975

Page 2 of 2

in the production of the tags is of an identical alloy and incorporates identical properties as that used years ago. The metallurgists opinion is quite simply "it's not in the metal --- and must be a varying outside influence that is present today that was not years ago".

We do not have any idea what this "varying outside influence" might be; it seems to have everyone puzzled - we are producing the tags today the same as 15 years ago, the only difference now is with the applicator. Our Pow-R-Cep applicator we believe is being more universally used with the monel tags, whereas several years ago only the conventional single leverage applicator was available. We do not think this would make any difference.

Should you have any further information, kindly keep me posted and be assured of my reciprocation in this direction.

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J. R. Haas

JRH/jcw/2





# University of Hawaii at Manoa

Hawaii Institute of Marine Biology

P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744

Cable Address: UNIHAW

October 16, 1975

Dr. George Hughes  
Natal Parks, Game and Fish Preservation Board  
P.O. Box 162  
Pietermaritzburg  
South Africa

Dear George:

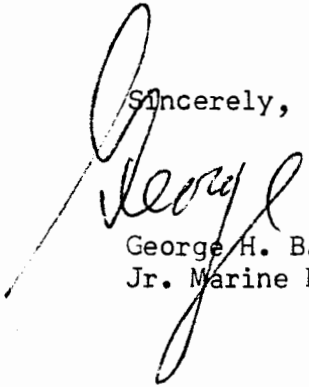
During the third week of August, Nicholas stopped off for a visit in Hawaii on his return from Malaysia. This gave us an excellent opportunity to discuss various aspects of turtle conservation and research. A priority item seemed to be the tag problem. Nicholas had toured the Trengganu nesting site and learned from workers that a few years ago plastic Rototags were incorporated in place of monel tags. It was unclear exactly what problems were experienced with the monel. This switch, of course, represents exactly the opposite of what took place in your own program in 1969-70. A greater overall exchange of information on this subject among workers would undoubtedly prove beneficial. In this respect, you may have already heard that the newsletter Nicholas planned to publish has not materialized. This is due to an absence of funds from IUCN and World Wildlife. Therefore, it would appear that our only avenue for information is personal correspondence.

I am most interested in the tag problem, as you are aware. I would like to get together as much information as possible and hope that you will assist me in this endeavor. In your publication of October, 1974, it was stated that "All plastic tags proved useless in the long run as virtually every tag has been lost." I wonder if you were in any way able to determine the factor(s) responsible for the plastic tag loss. Was it due to deterioration from seawater or sunlight, or possibly physical abuse during mating? Have you ever placed a Rototag in seawater or in direct sunlight for extended periods to determine the effects? Did you apply the Rototags with the tool supplied, or did you first punch an oversized hole with another instrument? Although I am aware of your general dissatisfaction with monel, you have never really told me the specifics. Are you finding a degree of corrosion on your returns and, if so, does it seem to be centered at the locking mechanism and/or the area in contact with the flesh? The enclosed photographs (need not be returned) show the type of corrosion I have found. I would also be most interested to learn of the exact sites that you have used for your tags. Perhaps you can mark the locations on the enclosed illustrations and return them to me when you have the opportunity. Your mention of a hindflipper site sounds encouraging.

George, I am wondering if possibly the low recovery rate found during subsequent seasons by many workers could be due to tag loss. As you have stated, a callous can sometimes be used to recognize a previously tagged turtle. However, do we know if the piercing site from a lost monel tag can heal completely over without the formation of a callous? I will try to investigate this possibility with some animals being held in a local aquarium.

The inconel offers a possible answer to our problems and I am looking forward to filing an order in 1976. I hope that your work is going well, and that you will forgive me for presenting you with so many questions.

Sincerely,



George H. Balazs  
Jr. Marine Biologist



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University of South Carolina  
Belle W. Baruch Instit. for Marine  
Biology & Coastal Research  
Columbia, South Carolina 29208

*COPY*

November 4, 1975

"OUR 73rd YEAR"

Attn: O. Rhett Talbert, Jr., Research Assoc.

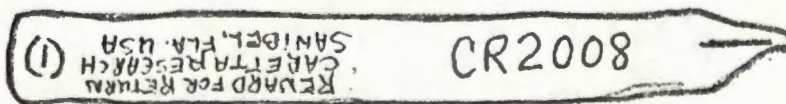
Dear Mr. Talbert:

Thank you for your letter dated October 30th. For the past year or so, we have been corresponding with Mr. Balazs and other individuals involved in similar research work with regards to the use of tags produced from Inconel metal versus the use of tags made from Monel metal. Enclosed is a copy of a letter that we wrote on 4/16/75 to Mr. Hughes in South Africa on this very subject, the letter will provide you with pricing and availability information.

Unfortunately, apparently, the availability of Inconel was a little bit late to be utilized in the seasonal operations, we understand that the nesting has already begun for this year, but we have information that would lead us to believe that there has been sufficient interest generated in the Inconel tags so that they might be utilized for the next season.

We would require an order for at least 5000 tags to qualify for the mill's minimum material requirement. In your letter you mentioned considering ordering 2000 tags and if we could find one or more agencies interested in ordering out the balance of 3000, we could at least get the project of the Inconel tags off dead-center and place our order with the mill for the material. As it stands now, the mill is simply waiting until we receive enough tag orders to qualify us for ordering their material. I am sending a copy of this letter to Mr. Balazs, perhaps his agency would be interested in ordering out some tags at this time or, perhaps, he would know of someone else who would be interested.

The way we interpret your October 30th letter is that you would be interested in, perhaps, 2000 tags in numerical sequence in the same format and stamped with the same legend that we supplied to Caretta Research, Sanibel Island, Florida. Our records show Caretta Research uses tags in the format laid out as follows.



University of S.C.  
Columbia, South Carolina  
Attn: O. Rhett Talbert

November 4, 1975

Page -2-

We appreciate your writing us and we are looking forward to your further response. As of now, we cannot furnish the tags in Inconel, but we can furnish them produced from Monel.

Yours truly,

NATIONAL BAND AND TAG COMPANY

J. R. Haas

JRH:lc/3

CC: University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
Kanehoe, Hawaii 96744  
Attn: George H. Balazs, Jr. Marine Biologist



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University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O. Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

November 7, 1975

"OUR 73rd YEAR"

Attn: George H. Balazs

Dear Mr. Balazs:

Thank you for your letter of November 3rd, under separate mail I am arranging to send to you one of our style 6-49S single leverage action applicators - there will be no charge. As mentioned previously to you, I hardly believe this difference in applicator is of any consequence, but I will happily furnish this to you at no charge if you want to investigate this possibility.

The alloy that we use in the production of the tags is Monel 400, 1/4" hard temper. I questioned a metallurgist on their ambiguous opinion of "varying outside influences" and at the time I believe one of them mentioned that perhaps the seas are more polluted now than they were 15 or 20 years ago. This thought didn't register with me, but since then, if memory serves me correctly, one of your research colleagues mentioned the possibility that he believed pollutants would have a great deal of effect on the corrosion of tags and, perhaps, this might explain in part why more tag deterioration has been experienced in recent years than in that of years long ago.

Thanks for your continued information and I'm quite hopeful that we might have a composite order in the near future that would allow us to purchase the Inconel material.

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J. R. Haas

JRH:lc/2



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
November 11, 1975

International Nickel Company  
~~Huntington Alloy Division~~  
~~67 Wall Street~~  
~~New York, New York 10005~~

*1 - New York Plaza  
Manhattan, New York 10027*

Dear Sirs:

ITT Harper of Morton Grove, Illinois has suggested that I contact you concerning my interests in the corrosion of Monel.

For the past three years I have been conducting tagging studies of the green sea turtle in the Hawaiian Archipelago. Previous to my own involvement, personnel of the U.S. Fish and Wildlife Service intermittently tagged Hawaiian turtles dating as far back as 1961. The tags used by both of our agencies for this research have been made of Monel (series number and source unknown) and obtained from the National Band and Tag Company of Newport, Kentucky. Presently, there are at least 10 other sea turtle research programs around the world that are also using these Monel tags. I have been in contact with many of these investigators and, to some extent, all have experienced the same problem. Simply stated, the Monel tags corrode. The level of corrosion is quite variable. In my own particular case, extensive deterioration has been seen 6 months after application, while in other cases only mild deterioration has resulted after 10 years in the wild. Due to the nature of the turtle's life cycle, and the amount of work which goes into tagging, the loss of tags represents a major set-back to our research. It is unknown just how long these animals live, however, it would certainly be desirable to have a tag life of 40 years or more. It is apparent that this is not possible with Monel, and it seems unfortunate that a more corrosion resistant alloy was not used in the first place.

The corrosion that I have observed on the self-piercing Monel tags made by National Band and Tag Company seems to be related to the following factors:

1. the site of contact with the body tissue- Greater corrosion occurs on the section of the tag that is inside the turtle's flesh (the tagging site is usually on the trailing edge of the front limbs). At first I thought that this corrosion might be caused by the animal's body chemistry. However, in a small experiment with tags tied to plastic cord and suspended in the ocean, corrosion resulted at the site of contact with the inert cord. The corrosion observed is usually green, or sometimes green and black.

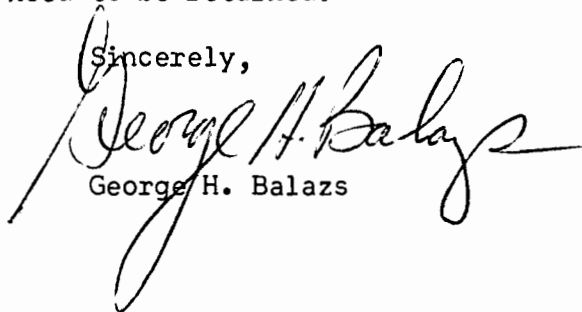
2. the locking mechanism of the tag- Corrosion frequently takes place at the locking end of the tag, even when it is not in direct contact with the turtle's flesh. The interior of the stamped lettering also seems to be more susceptible to attach.
3. the year of the tag's production- Tags that were purchased and put on turtles 6 to 10 years ago are holding up far better than ones applied in recent years. It is logical to suspect that a change has occurred in the quality or series number of the Monel used. However, National Band and Tag states that no such change has taken place. The alternative explanation is that changes have occurred in the turtles and/or their environment (the ocean).

I have carried out considerable correspondence with National Band and Tag Company on this corrosion problem. They have been as helpful as possible, however, I have not been referred to the source of their Monel. I am hoping that Huntington Alloy Division is that source, and that your metallurgists will be in a position to give further information on the subject.

In recent months National Band and Tag has indicated that a supply of Inconel 625 can be obtained if an order for 5000 tags is placed. A problem seems to exist in getting small quantities of this alloy. Few sea turtle researchers need ( or can afford) such a large number of tags at one time, therefore I have been attempting to assemble a composite order. Do you or have you recommended Inconel 625 for such purposes as sea turtle tags? Is there another alloy that would do the job better? Is there the possibility of obtaining Inconel strip ( or another alloy) directly from you in order to fashion a limited number of experimental tags for preliminary testing? Are you aware of any toxic properties related to Inconel, such as skin dermatitis? Would pure nickel be feasible for use as a sea turtle tag?

Your assistance in this entire matter would undoubtedly prove to be most valuable. I have enclosed for reference purposes two Monel tags (straightened for mailing). Tag T176 is unused, while tag 910 was on a turtle for 11 months. Neither of these samples need to be returned.

Sincerely,



George H. Balazs

GHB:md  
enclosure



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Hawaii Institute of Marine Biology  
P.O. Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

November 11, 1975

"OUR 73rd YEAR"

Attn: George H. Balazs

Dear Mr. Balazs:

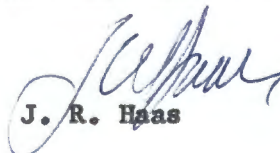
Thank you for your note of November 8th. If you would be interested in ordering out 1000 of the Inconel tags and Mr. Talbert would permit us to make for him 2000 Inconel tags, perhaps, we could go ahead and order the material from the mill. We would have to order enough material to manufacture 5000 tags so the result would be that we would have in our stock enough material to produce another 2000 Inconel tags.

The price would be as I quoted to you previously, \$281.20 per 1000. There would be a die alteration charge of \$100.00 and I am wondering if it would be equitable to split this charge \$50.00 to you and \$50.00 to Mr. Talbert. The Inconel is known as Alloy 625. Unfortunately, we would not be able to produce a portion of the tags in the size 681 as the size 681 requires material made from entirely different dimensions. We are sure the mill would require the entire lot of material to be of one set of specifications.

We await your further information.

Yours truly,

NATIONAL BAND & TAG COMPANY

  
J. R. Haas

JRH:1c/2

• THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS •

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.





# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
November 14, 1975

Mr. Rhett Talbert  
Belle W. Baruch Coastal Research Institute  
University of South Carolina  
Columbia, South Carolina- 29208

Dear Rhett:

Concerning the enclosed copied letter from Mr. Haas of National Band and Tag (NBT), I wonder if you would be interested in ordering your tags in size 681 (sample enclosed). There seems to be no reason why this size cannot be used successfully on large turtles. In fact, I have tagged about 40 adults with size 681 (15 were captive animals) and the only problems noted were those of corrosion, such as with size 49. I may have mentioned to you that a portion of my work involves the tagging of juveniles on the feeding grounds. Size 681 will allow such tagging without overburdening the animal. With size 49, it will only be possible to tag large turtles. I can see other possible benefits to size 681. These are: 1) a simplified and less "worker" locking mechanism that should lessen any possible chance (heaven forbid) of corrosion; and 2) a reduced "target" for other turtles to bite. George Hughes in South Africa has often found tags in situ that were crushed flat, presumably bitten by other adults on the feeding pastures. How many tags get lost in this manner is unknown.

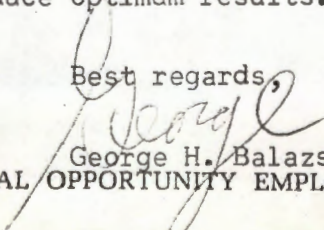
I have not brought up the question of tag size before simply because I thought NBT could easily order strip of each size in their total order from the nickel people. As far as splitting the \$100.00 die alteration charge between the two of us, I am agreeable. However, as the remaining 2000 tags are sold, the buyer(s) should rightfully be charged a proportion of the original alteration charge. This amount should be credited to us for future orders.

On another related matter, only a few days ago I was placed in contact with a New York manufacturer that specializes in nickel alloys. I have written them a letter and therefore would like to wait for a reply before placing any tag order.

To summarize, I am in a position to order 1000 Inconel tags, however it would be desirable if all or at least a portion of these tags could be in size 681 instead of size 49. If this is not possible, I will go ahead and order size 49.

Sorry to complicate this matter further, however, under my circumstances each tag that is applied represents one heck of a lot of work- simply getting to where the turtles are located is difficult. I therefore want to carefully examine all possibilities so that the investment of effort, and to a lesser extent money, will produce optimum results. I am sure that you have a similar goal.

Best regards,

  
George H. Balazs

AN EQUAL OPPORTUNITY EMPLOYER



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# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O. Box 1346 - Coconut Island  
Kaneohe, Hawaii 96744

November 25, 1975

"OUR 73rd YEAR"

Attn: George H. Balazs

AIR MAIL

Dear Mr. Balazs:

We have your letter copy dated November 14th addressed to Mr. Rhett Talbert of the University of South Carolina in Columbia, I appreciate your sending me a copy of the letter as the information concerning the size 681 tag was very interesting.

If we get into the size 681 tag, we will engage a completely different set of conditions with regards to availability and pricing than are applicable to the size 49 tag.

The size 681 tag being smaller is going to require less material which will result in a larger initial tag order to qualify for the mill's minimum. 12,500 tags minimum would be required. Pricing would be \$149.70 per 1000, FOB factory and the \$100.00 die alteration charge again would be applicable. Please understand that this pricing for the 681 tag is not firm, I am merely taking it from the information that I have from the Inconel mills that was furnished for the size 49 tags. I know the minimum quantity would be the same but I am not sure about cost as the cost information was supplied to me so many months ago.

As for the die alteration charge, we would be agreeable to accept a composit order from two, three or more buyers at one time and charge each account equal amounts, however, it would be difficult for us to split the alteration charge between the first buyer(s) and continue to amortize the charge to subsequent buyers, crediting previous buyer(s) accounts, etc., as doing so would involve considerable bookkeeping. It would be hard for us to justify limiting any such adjustment to the balance of the 2000 tags, therefore, we are not eager to establish such a precedent.

Your comment on the New York manufacturer that specializes in nickel alloys is interesting. If you will please provide me with the name and address of the firm, perhaps, I could contact him with regards to the Inconel availability.

Thanking you, I remain,

Yours truly,

NATIONAL BAND AND TAG COMPANY

*J. R. Haas*  
J. R. Haas

JRH:lc/5

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November 26, 1975

Mr. George H. Balazs  
University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P. O. Box 1346  
Coconut Island  
Kaneohe, HI 96744

Dear Mr. Balazs:

Thank you for your letter of November 11 relating to the use of Monel alloy 400 for tagging turtles.

Since your letter mentions alloys which are products of Huntington Alloys, Inc., I am forwarding a copy of this letter as well as a copy of yours, including the samples, to Mr. Jack Cundiff, Marketing Manager, Huntington Alloys, Inc.

You should expect to hear from him shortly.

Sincerely,

*R. B. Teel*  
(ee)

R. B. Teel  
Contract Research & Testing Manager

RBT:ee

cc: Jack Cundiff w/attach.

TO SEND A TELEGRAM BY TELEPHONE  
Dial 537-2521 (All Hours)

AA  
VIA RCA

ZCZC SAH216 CAA0699 2-055606E336  
HRHX CO URNX 081  
TDMT HUNTINGTON WV 81 02 0559P EST VIA RCA

TELEPHONED  
To Penzance  
Time 5:30  
By JH

GEORGE H BALAZS  
UNIVERSITY OF HAWAII AT MANOA HAWAII INSTITUTE OF MARINE BIOLOGY  
P O BOX 1346 COCONUT ISLAND  
KANEEOHE96744 (HAWAII )

ARRANGEMENTS HAVE BEEN MADE TO SEND YOU TWO PIECES OF INCONEL ALLOY  
625 SHEET MEASURING 0.025 INCH BY 6 INCHES BY 12 INCHES FOR YOUR  
TURTLE TAGGING EXPERIMENTS INCONEL ALLOY 625 SHOULD PROVIDE THE  
CORROSION RESISTANT CHARACTER YOU SEEM TO NEED FOR METAL TAGGING I  
WILL RESPOND IN DETAIL TO YOUR LETTER OF NOVEMBER 11  
L A YERKOVICH HAI HTG

COL 1346 KANEEOHE96744 625 0.025 6 12 625 11



HUNTINGTON ALLOYS, INC., HUNTINGTON, WEST VIRGINIA 25720

J. W. CUNDIFF  
MARKET DEVELOPMENT MANAGER

December 4, 1975

RK-6

Mr. George H. Balazs  
University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P. O. Box 1346  
Coconut Island  
Kaneohe, Hawaii 96744

Dear Mr. Balazs:

This responds to your letter of November 11, 1975 which discusses in detail the inadequacy of MONEL alloy 400 for marine turtle tags. It is indeed regrettable that you have experienced major set-backs in your research just because tag identifications have been obliterated by corrosion. It is equally regrettable that a more noble alloy, one that can stand up to the rigors of sea water exposure for many many years without corroding, was not chosen at the outset of your research efforts. Were this the case Mr. Balazs, many of the set-backs could have been averted. In light of your unfortunate experiences, it is, of course, timely to set about to correct the situation but we will get into that a bit later.

MONEL alloy 400 is manufactured to a limiting chemical range. Compositions within this limiting range are regarded to react essentially the same way in their corrosion behaviors, provided, of course, that all the variables that influence corrosion and corrosion reactions are fixed. We can, I'm sure, assign some minor differences in corrosion behavior to metallurgical variations within this chemical range but when the differences are major and out of proportion as you have indicated, then one is led to suspect variations in the corroding medium; in this case sea water. I am not familiar with the life cycle of sea turtles, their migration patterns, the nature of their body fluids, or the corrosive character of these fluids, so I can offer no comments as these relate to the tag corrosion problems you have sensed. I shall however address myself to the sea turtles habitat, sea water, because I suspect that herein lies the answer as to why MONEL alloy 400 is showing pronounced differences in its corrosion behavior. You, I'm sure, know better than I the complex solution that sea water represents. Its composition,

REQUEST FOR CUSTOMER SAMPLE

Date Entered December 4, 1975

Company University of Hawaii at Manoa

Address Hawaii Institute of Marine Biology

P. O. Box 1346

Coconut Island

Kaneohe, Hawaii 96744

Taken From:

Sample Stock

Production

Attention: Mr. George H. Balazs

Shipped \_\_\_\_\_

Order # \_\_\_\_\_

Scheduled \_\_\_\_\_

Alloy INCONEL alloy 625

Shipped \_\_\_\_\_

Product CR Sheet Ann

Method Of Shipment \_\_\_\_\_

Pieces Required 2

Value \_\_\_\_\_

Dimensions .025" x 6" x 12"

(For Foreign Shipments Only)

Heat # NX4507AG

Bin # 3B9

To Be Used For Material to be evaluated for turtle tagging.

Source: L. A. Yerkovich

Initiated By: D. L. Rose

District Office

Approved By: \_\_\_\_\_

Distributor

Remarks and/or Follow-Up \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology

P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744

Cable Address: UNIHAW

December 11, 1975

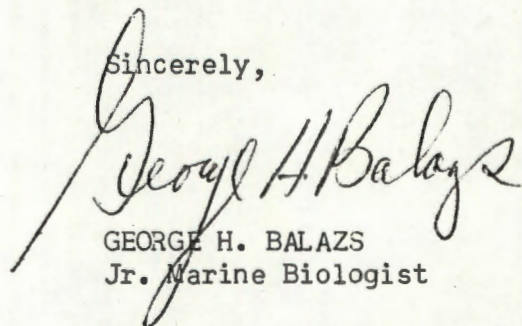
Mr. L.A. Yerkovich  
Senior Technical Coordinator  
Huntington Alloys, Inc.  
Huntington, West Virginia 25720

Dear Mr. Yerkovich:

Thank you very much for your comprehensive letter of December 4 dealing with tags for sea turtles. The information was most helpful to gaining a better understanding of the problem. I have taken the liberty of forwarding a copy of your letter to Mr. J.R. Haas of National Band and Tag Company. In the very near future an order will be placed with this company for Inconel tags. Arrangements have already been made to satisfy the 5000 minimum for the tag size designation of 49 (approx. 3/8" wide). My particular studies also require use of a tag size 681 (approx. 5/16" wide). Unfortunately, it will not be financially or practically possible to meet the large number (12,500) required as a minimum. I am therefore wondering if you can be of assistance in obtaining an exemption on the minimum quantity requirement imposed by Huntington Alloys? There would seem to be justification in that the end use will be nonprofit scientific research. There may even be an advertising potential to the story of Inconel tags and sea turtles.

Again, many thanks for your assistance in this entire matter.

Sincerely,



GEORGE H. BALAZS  
Jr. Marine Biologist

cc  
J.R. Haas



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Mr. George Balazs  
University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O. Box 1346 - Coconut Island  
Kaneohe, Hawaii 96744

December 31, 1975

"OUR 73rd YEAR"

AIR MAIL

Dear Mr. Balazs:

I appreciate receiving a copy of your letter dated December 12, 1975 to Mr. Yerkovich at the Huntington Alloys Corporation in Huntington, West Virginia together with a copy of Mr. Yerkovich's letter to you dated 12/4/75.

Mr. Yerkovich's letter to you of 12/4/75 related much of the same information that I have been receiving from Huntington Alloys and their distributors, I have spoken to Mr. Yerkovich on many occasions with regards to this subject. I have also approached Mr. Yerkovich and his associates with regards to their granting some relief to their minimum ordering requirement in the interest of scientific research and the possibility of advertising potential as we have on past occasions successfully utilized this approach. Just recently we received word from Huntington Alloys local representative that for the time being at least the minimum has been waived and that we can now place orders for most any quantity of material that might be required. However, they would not provide me material costs on a quantity lower than 40 pounds.

Considering these circumstances, we would now be able to proceed with an order from you or a composit order for a minimum of 2000 tags in the size 49.

Depending upon the exact quantity of tags ordered, the pricing would range anywhere from \$251.80 per 1000 to \$281.20 per 1000. FOB Factory. The \$100.00 die alteration charge would still be applicable.

It is apparent that no one really knows exactly what the material will cost as each time that I request pricing, I am quoted costs that are different than before. I believe it is safe to state that we will not know what the material costs until we receive it and the accompanying invoice. This is not unusual as almost all metal mills today are quoting terms of price at time of shipment.

Thanking you, I remain,

Yours truly,

NATIONAL BAND AND TAG COMPANY

J. R. Haas

JRH:lc/2

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# NATIONAL BAND AND TAG COMPANY

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41072

University of Hawaii at Manoa  
P.O. Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

January 30, 1976

"OUR 74th YEAR"

Attn: George H. Balazs,  
Jr. Marine Biologist

Dear Mr. Balazs:

Thank you for your letter order of January 26th.

Regretfully, I must report to you that yours is the only order we have received for the 681 Inconel tags. We received one other inquiry for a price on a couple of thousand Inconel size 49 tags.

The question arises whether you want us to go ahead and proceed with your order whereupon if you do, your account will be billed with the full die alteration expense. Or, should we hold your order in abeyance pending the possibility of our receipt of orders for the 681 Inconel from other clients whereupon the die alteration charge could be shared.

Meanwhile, we are enclosing sample tags which will illustrate the position and left to right reading of the numbers as we would propose to furnish on your tags. We would attempt to center the 4-digit numbers as best we could. The legend:

"NOTIFY HAWAII  
MARINE LAB HIMB  
KANEEOHE, 96744"

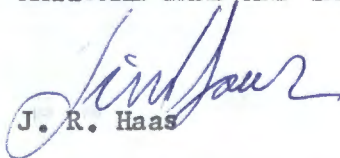
would appear on the flat surface of the hole end of the tag reading left to right to the hole.

Please confirm that the above arrangement of the lettering and numbering is acceptable to you and also whether we should proceed with the production of your order and we will advise you anticipated cost and delivery.

Thanking you, we remain,

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J. R. Haas

JRH:lc/2



HUNTINGTON ALLOYS, INC., HUNTINGTON, WEST VIRGINIA 25720

January 2, 1976  
NC-5

J. W. CUNDIFF  
MARKET DEVELOPMENT MANAGER

Mr. George H. Balazs  
University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O. Box 1346  
Coconut Island  
Kaneohe, Hawaii 96744

Dear Mr. Balazs:

I was very much pleased to learn that you intend to have your turtle tags fabricated in INCONEL alloy 625. You will in the process of changing to this alloy, remedy the problem of tag corrosion that has from time to time interrupted your research efforts. One word of caution, however, in placing your order for the tags be sure you specify INCONEL alloy 625. In your letter, you mentioned INCONEL without any numerical designation. The numerical designation is extremely important, and we must be certain that the proper alloy is used, otherwise, there will be a recurrence of the same corrosion problem.

The product which National Band and Tag uses to manufacture your identification tags is, I suspect, coiled strip supplied to its thickness and width requirements; tag size 49 for example would be 3/8 x .034. National Band and Tag would purchase the strip coil from manufacturing converters who purchase coils from Huntington or other primary producers, then roll and slit to size. Because the route from primary producer to tag manufacturer is not under our control, we can give you no assistance on the question of minimum quantities. The fact, Mr. Balazs, is that Huntington Alloys does not manufacture the product (coiled strip) that National Band and Tag uses. Product prices including such items as base price, tolerance extras, edge extras and quantity extras are set by the manufacturing converters and we, the primary producers, have no say in their pricing schedules and pricing practices. By the same token, tag prices including set up charges, minimum quantity of tags, tool and die charges, etc., are set by the tag manufacturer, and here too, we have no say in the matter. I do hope I've made this clear, yet at the same time, I wish it were within my power to offer some sort of price relief.

Mr. Balazs, I'm sorry about the events as they turned out, and while we cannot help on the tag pricing issue, I hope you will seek our assistance when you have need of it.

Very truly yours,

*L. A. Yerkovich*

L. A. Yerkovich  
Senior Technical  
Coordinator

LAY/njc



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
January 6, 1976

**To: TURTLE PEOPLE INTERESTED IN INCONEL TAGS**

**From: GEORGE H. BALAZS**

From the attached copied correspondence, you will see that Huntington Alloys (a division of International Nickel Company) has temporarily waived their minimum order requirement for Inconel. This gesture now gives National Band and Tag Company greater leeway in obtaining Inconel in order to fill specific orders for self-piercing tags. If you have been considering the use of Inconel tags, I urge you to take advantage of this opportunity and immediately place an order with National Band and Tag Company. Because of changing policies, there is no assurance as to how long this offer will last.

You may want to consider including in your order 1000 (or multiples thereof) of the No. 681 tags. This tag is about half the size of the commonly used No. 49. The advantages of No. 681 are its suitability for use on turtles as small as 4 kg, as well as a simpler locking mechanism. The cost of these tags has been estimated to be approximately US\$150 per 1000 plus the one time die alteration charge of US\$100.

Please note that the one time die alteration charge (applicable to No. 49 and No. 681) will be divided equally between the various orders that are received. Therefore, the more orders that are placed, the less the individual cost.

No. 681    Approx. 35-2mm letters  
          possible

No. 49    Approx. 55-2mm letters  
          possible



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
January 26, 1976

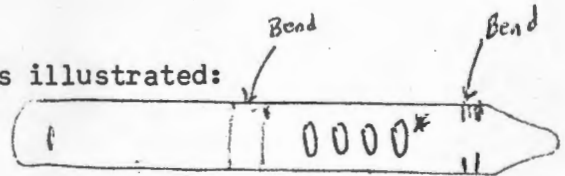
Mr. J.R. Haas  
National Band and Tag Company  
721 York Street  
Newport, KY 41072

Dear Mr. Haas:

I hope that by this time you have received a number of orders for Inconel Alloy 625 tags in response to my widely distributed memorandum of January 6. At this time I would like to place an order for 2000 of these tags in size 681. They should be consecutively numbered 2051 through 4050, and be imprinted as follows:

NOTIFY HAWAII  
MARINE LAB HIMB  
KANEOHE, 96744

The consecutive numbers should be centered as illustrated:



At your earliest convenience, please notify me of the exact cost and approximate projected delivery date. Hopefully, other orders for the size 681 have been placed so as to lessen the die alteration charge to each individual. I trust that you received the copied letter from Mr. Yerkovich stressing the importance of specifying Inconel Alloy 625.

Sincerely,

*George H. Balazs*  
George H. Balazs  
Jr. Marine Biologist

\* Four digit number centered on this section of tag



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology

P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744

Cable Address: UNIHAW

February 4, 1976

Mr. J.R. Haas  
National Band and Tag Company  
721 York Street  
Newport, KY 41072

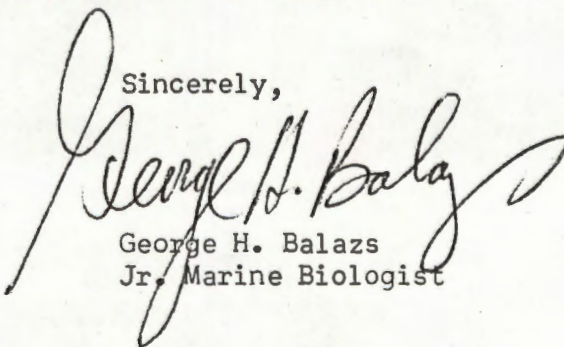
Dear Mr. Haas:

I was astonished to learn of the paucity of orders you have received for the INCONEL 625 tags. It would appear that many of my fellow researchers are being quite short-sighted in this matter. Yes, I wish to proceed with my order for 2000 Size 681 tags. I will pay the \$100.00 die alteration. As you indicated in your letter of November 25, I know you do not want to set a precedent of crediting accounts after subsequent orders have been received. However, any special consideration you could give to this one-time case would be most appreciated. I approve of the left to right reading of numbers and legend on tags as you described. However, after additional thought, I have decided that the comma between KANEOHE and 96744 serves no useful purpose and should therefore be deleted.

You may be interested to learn that several weeks ago a Professor Tom Harrisson was killed in a traffic accident in Thailand. Since the early 1950's, Tom has been an active voice in green sea turtle conservation and research. It is my understanding that he was the first individual to suggest and use self-piercing cattle ear tags (from NBTC?) on sea turtles. This was done in North Borneo when Tom was the Director of the Sarawak Museum. Last year I had the honor and pleasure of meeting Tom at a conservation meeting in Florida. His death represents a serious setback to rational, worldwide efforts to conserve the remaining sea turtle resources.

In relation to the tragic event I have described, I have perhaps a somewhat unusual request to make. In small lettering, I wonder if you could arrange to place IN MEMORY OF TH somewhere on my tags. This lettering could be even smaller than the 2 mm size used in the legend. Two possible locations might be 1) directly under the numbers or 2) on interior surfaces of the tag. This small gesture strikes me as being a fitting tribute to an individual that contributed so much.

Sincerely,



George H. Balazs  
Jr. Marine Biologist



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University of Hawaii at Manoa,  
P.O.Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

February 18, 1976

"OUR 74th YEAR"

Page 1 of 2

Attn: Mr. George H. Balazs  
Jr. Marine Biologist

Write HIMB

UNIVERSITY  
HAWAII 96822

6 NOTIFY  
10 UNIVERSITY  
6 HAWAII

12 NOTIFY UNIV.  
10 MARINE LAB  
12 HAWAII 96744

Dear Mr. Balazs:

I have your letter dated February 4th.

I regret to learn of the death of Professor Tom Harrison -- I am confident his absence will be deeply felt in your profession. Your suggestion of placing an inscription on the tags in memory of Professor Harrison is understandable but it is doubtful we can accomplish your request. This can be determined only immediately preceding actual fabrication, but be assured we will do everything possible to include some appropriate inscription on the tags. It might be necessary to place such inscription on the inside and we are wondering if you would have any objection to such a location. Meanwhile, we have gone ahead and made arrangements for ordering material.

OK

Also, you mention the legend to be stamped in 2 mm size characters. It would be necessary to furnish characters in 1/16" size which would be slightly smaller and we should like to have your approval before proceeding. In addition, after careful evaluation of the legend that you specify wanting to appear on the tags, such as:

"NOTIFY HAWAII  
MARINE LAB HIMB  
KANEEOHE 96744"

we are sorry but the extent of the legend is beyond the capabilities of our equipment. Would it be possible to utilize a re-arrangement of the legend as follows:

- |  |   |   |
|--|---|---|
| 1. 13 "NOTIFY HAWAII<br>10 MARINE LAB<br>12 HIMB KANEEOHE" | 2. 11 "NOTIFY HIMB<br>11 LAB KANEEOHE<br>12 HAWAII 96744" | 3. 13 NOTIFY HAWAII<br>8 HIMB LAB<br>13 KANEEOHE 96744" |
|--|---|---|

The absolute maximum quantity of 1/16" size letters that we can place on a single line is 13. We have learned that "pushing" the quantity of letters in the legend stamping to the utmost maximum of 3 lines containing 13 letters each is conducive to

(continued)

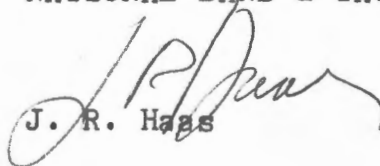
University of Hawaii at Manoa  
Kaneohe, Hawaii

tag malfunctioning. Therefore, we encourage a reduction of the characters in the legend stamping to as small a quantity as possible.

We await your further advices.

Yours truly,

NATIONAL BAND & TAG COMPANY

  
J. R. Hagg

JRH:vb  
(2)

P.S. Up to now, nothing has been mentioned of tag applicators. Will you be needing applicators?





# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
March 1, 1976

Mr. J.R. Haas  
National Band and Tag Company  
721 York Street  
Newport, KY 41072

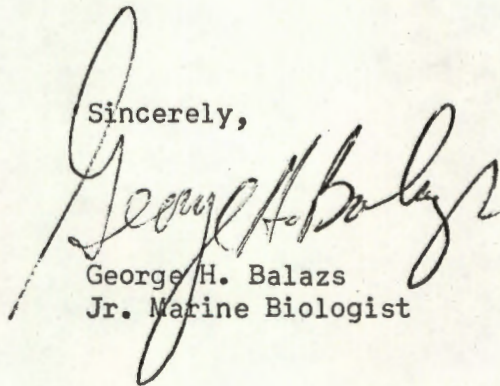
Dear Mr. Haas:

I don't know what I was thinking when I wrote to you on February 24 and indicated that the zip code for the tag legend should read as 96822. That is the zip code for the main University of Hawaii campus in Honolulu. I have always used our marine laboratory's zip code (96744) on all of my previous tag orders. I should therefore continue to use that number. The correct tag legend should read as:

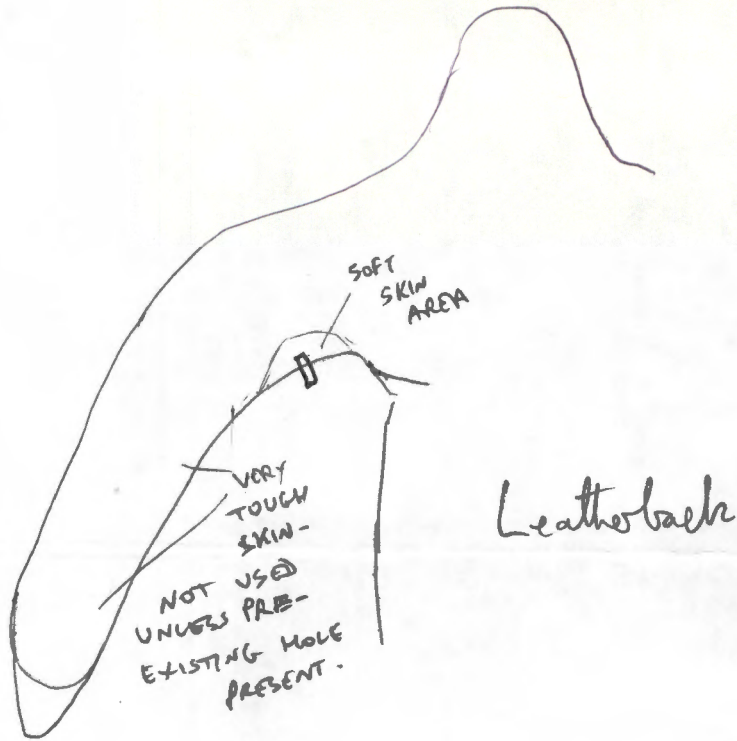
WRITE HIMB  
UNIVERSTIY  
HAWAII 96744

Sorry.

Sincerely,



George H. Balazs  
Jr. Marine Biologist





Manufacturers of IDENTIFICATION TAGS for

AGRICULTURE • HORTICULTURE • BIOLOGICAL • SCIENTIFIC RESEARCH

AIRCRAFT • RADIO • ELECTRICAL • MARINE • INDUSTRIAL USES

# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa,  
P.O.Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

March 11, 1976  
"OUR 74th YEAR"

Page 1 of 2

Attn: Mr. George H. Balazs,  
Jr. Marine Biologist

Dear Mr. Balazs:

I want to acknowledge receipt of your letters dated February 24th and March 1st. We have taken note of your Zip Code change and will do all possible to include a memorial inscription for Professor Tom Harrison somewhere on the tags.

I am sorry to have to report to you that for the past several weeks we have been haggling back and forth with our material supplier in regards to availability, price and of all things, suitability of the Inconel 625 for the intended purpose. I had really expected something like this to happen because we have been through all of this before with suppliers when it comes down to the nitty-gritty of ordering small quantities of special material. It is almost impossible to find someone who can speak comprehensively on the subject of Inconel 625. Mr. Yerkovich is the exception and after many references to Mr. Yerkovich, we finally were able to obtain what I think will be firm pricing and availability information.

The mill now wants \$315.00 for a sufficient quantity of material to produce approximately 2000 size #681 tags (note that I said "approximately"). They will not commit themselves to exact quantities and if we receive only sufficient material to produce 1800 tags, we will still be charged the \$315.00 -- or we might receive sufficient material for a quantity of 2400 tags but we will again be charged the \$315.00.

These circumstances will of course alter our price to you. Based on current conditions, it will be necessary to change our cost to you to \$207.50 per 1000 tags plus the \$100.00 die charge, FOB Factory.

Before we proceed further, we thought it best to appraise you of these developments.

(continued)

• THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS •

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.

University of Hawaii at Manoa  
Kaneohe, Hawaii

Mr. George H. Balazs

As you can see Mr. Balazs, apart from the die alteration charge which is actually only a reimbursement of labor costs, there is little company margin. Therefore, we are holding further action on the tags pending receipt of your advices.

Yours truly,

NATIONAL BAND & TAG COMPANY



J. R. Haas

JRH:vb  
(2)

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 606 261-2035



**BLUE - Factory      WHITE - Shipping      PINK - Office**

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDENROD COPY is the ORIGINAL INVOICE! Please refer to our invoice number and pay total itemized under **AMOUNT** below. (No statement will be sent).

P/L	COP	INV	ANS	ACK
1	-	4	JRH	1

FILE CODE HAWAII UNIV. AT MANOA  
 CHARGE TO:  
 4B1 HAWAII UNIV. AT MANOA  
 INSTITUTE OF MARINE BIOL.  
 P.O. BOX 1364 COCONUT ISLAND  
 KANEOHE, HAWAII 96744

4B1 CLASS SHIP TO:

CUST. ORDER NO. 1/26 & 2/4, 24 & 3/15/76  
 DATE 3/22/76  
 REQ.

NB & T ORDER NO. 035805

DATE ENTERED 3/22/76  
 TERMS: NET 30 NPT., KY  
 FOB

CLASS	ORDER NO.	INVOICE DATE	SHIPMENT

SHIPMENT REQ:

VIA: INS 52 PARCEL POST

ANTICIPATED WEEK ENDING: 6/25/76

QUANTITY

REFER TO THESE NUMBERS WHEN YOU INQUIRE ABOUT THIS INVOICE

QUANTITY BACK ORD.

INVOICE PRICE

QUANTITY SHIPPED

AMOUNT

3,000 (approx)

(4-1005) INCONEL 625, Size 681  
 Numbered:  
 2051 thru 5050

3000

STAMPED  
 "WRITE HIMB ) 1/16"  
 UNIVERSITY ) size  
 HAWAII 96744" )

net (1)

Die Alteration Charge.....

NUMBERS CENTERED ON FLAT SURFACE OF POINT END, READING LEFT TO RIGHT FROM THE POINT

STAMPING ON FLAT SURFACE OF THE HOLE END READING LEFT TO RIGHT TO HOLE END

SEE SKETCH:

2051

WRITE HIMB UNIVERSITY ( ) HAWAII 96744

ea 1

(4-1005-681S) Applicator

PLEASE CENTER CONSECUTIVE NUMBERS ON FLAT SURFACE AS BEST POSSIBLE

4/5/76: IF THERE IS EXTRA MATERIAL....CONTINUE MAKING BANDS....RUN THE MATERIAL OUT....

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 606 261-2035



**BLUE** - Factory      **WHITE** - Shipping      **PINK** - Office

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDENROD COPY is the ORIGINAL INVOICE. Please refer to our invoice number and pay total itemized under **AMOUNT** below. (No statement will be sent).

P/L	COP	INV	ANS	ACK
1	-	4	JRH	1

FILE CODE HAWAII UNIV. AT MANOA  
 CHARGE TO:  
 4B1 HAWAII UNIV. AT MANOA  
 INSTITUTE OF MARINE BIOL.  
 P.O. BOX 1364 COCONUT ISLAND  
 KANEOHE, HAWAII 96744

4B1 CLASS SHIP TO:

CUST. ORDER NO. 1/26 & 2/4, 24 & 3/15/76  
 DATE 3/22/76  
 REQ.

NB & T ORDER NO. 035805

DATE ENTERED 3/22/76  
 TERMS: NET 30  
 FOB NPT., KY

CLASS	ORDER NO.	INVOICE DATE	SHIPMENT
0481	035805	3-17-76	001

SHIPMENT REQ: VIA: INS 52 PARCEL POST

ANTICIPATED WEEK ENDING: 6/25/76

UNIT PRICE	QUANTITY	REFER TO THESE NUMBERS WHEN YOU INQUIRE ABOUT THIS INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED	AMOUNT
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207.50/M	2,000 (approx)	(4-1005) INCONEL 625, Size 681 Numbered: 2051 thru 5050 STAMPED "WRITE HIMB ) 1/16" UNIVERSITY ) size HAWAII 96744" )	0	207.50M	3000	622.50
----------	----------------	---	---	---------	------	--------

100.00-net	(1)	Die Alteration Charge.....  NUMBERS CENTERED ON FLAT SURFACE OF POINT END, READING LEFT TO RIGHT FROM THE POINT  STAMPING ON FLAT SURFACE OF THE HOLE END READING LEFT TO RIGHT TO HOLE END  SEE SKETCH: <span style="border: 1px solid black; padding: 2px;">2051 WRITE HIMB UNIVERSITY HAWAII 96744 ( )</span>	0	100.00	1	100.00
------------	-----	--	---	--------	---	--------

10.35/ea	1	(4-1005-681S) Applicator  PLEASE CENTER CONSECUTIVE NUMBERS ON FLAT SURFACE AS BEST POSSIBLE	0	10.35	1	10.35
				SUBTOTAL		732.85
				TRANSPORT		8.50
				INSURANCE		.80
				TOTAL		742.15

INSTRUCTIONS FOR USE  
OF THIS APPLICATOR:

MAKE POSITIVELY SURE THAT  
BACK SIDE (HOLE END) OF THE  
TAG RESTS FIRMLY ALONG  
THE BOTTOM EDGE OF THE  
APPLICATOR. FAILURE TO DO  
SO WILL RESULT IN A BAD  
WORKING TAG.



HAULMARK OF SERVICE

**SMITH'S TRANSFER CORPORATION**

General Office: P. O. Box 1000 Staunton, Virginia 24401 Area Code 703 886-8231

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 606 261-2035



BLUE - Factory      WHITE - Shipping      PINK - Office

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDENROD COPY is the ORIGINAL INVOICE Please refer to our invoice number and pay total itemized under **AMOUNT** below. (No statement will be sent).

P/L	COP	INV	ANS	ACK
1	-	4	JRH	1

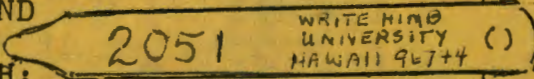
FILE CODE HAWAII UNIV. AT MANOA  
 CHARGE TO:  
 4B1 HAWAII UNIV. AT MANOA  
 INSTITUTE OF MARINE BIOL.  
 P.O. BOX 1364 COCONUT ISLAND  
 KANEOHE, HAWAII 96744

4B1 CLASS SHIP TO:

CUST. ORDER NO. 1/26 & 2/4, 24 & 3/15/76  
 DATE 3/22/76  
 REQ.

NB & T ORDER NO. 035805

DATE ENTERED 3/22/76	CLASS 4B1	ORDER NO. 035805	INVOICE DATE 3-17-76	SHIPMENT 001	SHIPMENT REQ.	VIA: INS 52 PARCEL POST
TERMS: NET 30 NPT., KY	ANTICIPATED WEEK ENDING: 6/25/76					

UNIT PRICE	QUANTITY	REFER TO THESE NUMBERS WHEN YOU INQUIRE ABOUT THIS INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED	AMOUNT	LINE
207.50/M	3,000 (approx) 2,000	(4-1005) INCONEL 625, Size 681 Numbered: 2051 thru 5050 STAMPED "WRITE HIMB ) 1/16" UNIVERSITY ) size HAWAII 96744" )	0	207.50	3000	622.50	
100.00-net	(1)	Die Alteration Charge.....  NUMBERS CENTERED ON FLAT SURFACE OF POINT END, READING LEFT TO RIGHT FROM THE POINT  STAMPING ON FLAT SURFACE OF THE HOLE END READING LEFT TO RIGHT TO HOLE END  SEE SKETCH: 	0	100.00	1	100.00	
10.35/ea	1	(4-1005-681S) Applicator  PLEASE CENTER CONSECUTIVE NUMBERS ON FLAT SURFACE AS BEST POSSIBLE	0	10.35	1	10.35	
						SUBTOTAL	732.85
						TRANSPORT	8.50
						INSURANCE	.80
						TOTAL	742.15





Manufacturers of IDENTIFICATION TAGS for

AGRICULTURE • HORTICULTURE • BIOLOGICAL • SCIENTIFIC RESEARCH

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# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa  
Institute of Marine Biology  
P.O. Box 1364 Coconut Island  
Kaneohe, Hawaii 96744

March 24, 1976

"OUR 74th YEAR"

Attn: George H. Balazs, Jr. Marine Biologist

Dear Mr. Balazs:

Your letter dated March 15th has been received and we are proceeding with your order for the 2000 size 681 Inconel tags per our enclosed acknowledgement copy. Should we receive an overage on the material, I will give you first option on purchasing. Or, would you prefer that we merely continue making tags on your order until the material runs out? I am sure it won't be much of an overage.

The other day we received an order from Mr. Hughes in South Africa for 2000 of the Inconel size 49 tags for which we are now negotiating for a sufficient quantity of material. This is the first order for the size 49 Inconel tags we have received and we have written back to Mr. Hughes outlining current pricing and anticipated delivery conditions.

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J.R. Haas

JRH:lc/1

• THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS •

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.

# NATIONAL BATTERY & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, CT. 06102 U.S.A. • AREA CODE 866 261-2035

**BLUE - Factory**      **WHITE - Shipping**      **PINK - Office**

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDENROD COPY is the ORIGINAL INVOICE. Please refer to our invoice number and pay total itemized under 200.00 below. (No statement will be sent).

P/L	COP	INV	ANS	ACK
1	-	4	JRM	J

FILE CODE HAWAII UNIV. AT MANOA  
 CHARGE TO:  
 4B1 HAWAII UNIV. AT MANOA  
 INSTITUTE OF MARINE BIOL.  
 P.O. BOX 1364 COCONUT ISLAND  
 KANE OHE, HAWAII 96744

4B1 CLASS      GHI TO:

CUST. ORDER NO.  
 1/26 & 2/4, 24  
 & 3/15/76

DATE  
 3/22/76

REQ.

HD & T ORDER NO. 035805

DATE ENTERED 3/22/76  
 TERMS: NET 30  
 FOB NPT., KY

CLASS	ORDER NO.	INVOICE DATE	SHIPMENT

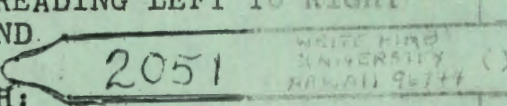
SHIPMENT REQ.

VIA INS 52  
 PARCEL POST

ANTICIPATED WEEK ENDING: 6/25/76

UNIT PRICE	QUANTITY	REFER TO THESE NUMBERS WHEN YOU INQUIRE ABOUT THIS INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED
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207.50/M	2,000 (approx)	(4-1005) INCONEL 625, Size 681 Numbered: 2051 thru 4050 STAMPED "WRITE HEMB ) 1/16" UNIVERSITY ) size HAWAII 96744" )			
----------	----------------	---	--	--	--

100.00-net	(1)	Die Alteration Charge.....  NUMBERS CENTERED ON FLAT SURFACE OF POINT END, READING LEFT TO RIGHT FROM THE POINT  STAMPING ON FLAT SURFACE OF THE HOLE END READING LEFT TO RIGHT TO HOLE END.  SEE SKETCH: 			
------------	-----	--	--	--	--

10.35/ea	1	(4-1005-681S) Applicator  PLEASE CENTER CONSECUTIVE NUMBERS ON FLAT SURFACE AS BEST POSSIBLE			
----------	---	--	--	--	--



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW  
March 28, 1976

Mr. J.R. Haas  
National Band and Tag Company  
721 York Street  
Newport, Ky 41072

Dear Mr. Haas:

I have received your 24 March letter and order copy No. 035805. All of the information is correct. If there is an overage on the material, please continue making tags on my order with consecutive numbers from 4050.

I was pleased to learn that George Hughes has now placed an order for 2000 size 49 Inconel tags. Perhaps if there is an overage on his material, there will be the opportunity for me to purchase a small order of size 49 tags. Please advise when such information becomes available.

I was somewhat suprised to note the June 25, 1976 shipping or delivery date on the order copy. The Hawaiian green turtle nesting season starts in about eight weeks (late May) and if at all possible it would be most desirable to have the new tags at that time. I am sure you will do the best you can under the circumstances. Incidentally, the order will not be charged to HIMB- University of Hawaii, but rather will be paid by private grant funds that are under my personal control. A check can be sent at any time you so desire.

Recently I had a visit from Bob DeLong of the National Marine Fisheries Service and we had an interesting talk about the problems of tagging seals. Apparently he has been in correspondence with you. Monel seems to hold up well on seals, at least that was his opinion.

Sincerely,

GEORGE H. BALAZS  
Jr. Marine Biologist

GHB:le



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Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa  
Hawaii Inst. of Marine Biology  
P.O. Box 1346 Coconut Island  
Kaneohe, Hawaii 96744

April 5, 1976

"OUR 74th YEAR"

Attn: George H. Balazs,  
Jr. Marine Biologist.

Dear Mr. Balazs:

Thank you for your letter of March 28th. We are making a note if we have an overage of material, we will continue making tags until the materials runs out. When Mr. Hughes' order is consummated for the size 49 inconel tags, we will contact you if we have an overage on this material in the event that you want to order some of the inconel size 49 tags.

As for anticipated shipping on your order for 2000 size 681 Inconel tags, the June 25th date is purposely somewhat extended. We actually do not know what to expect from the mills. They advise us they will ship the material on or about May 11th but whether we can really depend on this is something that I am unable to determine. If we do get material shipped from the mills about May 11th, we could expect receipt within a few days and will promptly commence with fabrication of the tags. I would anticipate we would need at least 10 days to 2 weeks for production and shipment of the tags after we receive the material from the mill.

We will keep you advised. Thank you.

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J. R. Haas

JRH:lc/2



Manufacturers of IDENTIFICATION TAGS for

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NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa  
Institute of Marine Biology  
P.O. Box 1364, Coconut Island  
Kaneohe, Hawaii 96744

April 12, 1976

"OUR 74th YEAR"

Attn: George Balazs, Jr. Marine Biologist

Dear Mr. Balazs:

Supplementing our letter to you of April 5th, I am sorry to report that because of some unforeseen circumstances, it was necessary for us to cancel Mr. Hughes' order for the size 49 Inconel tags. We just today learned the Inconel cannot be supplied with similar softness properties as can monel which softness properties are absolutely essential to our fabrication processes. The size 681 tag construction, we believe, will allow more of a deviation, and we are, therefore, willing to risk the manufacture of the size 681 tag -- but this is a pure speculation, it might be that after we purchase the material and attempt production of the tags that we will end up with nothing but broken pieces.

We are confident that the construction of the size 49 tags will not at all permit such deviations from the softness properties that we require and, therefore, we have no alternative but to hold the matter of production of the size 49 tags from the Inconel 625 in abeyance pending our finding an acceptable solution. The solution as we see it would be to fabricate the larger size 49 tag with the slot and point curl locking device similar as is now incorporated into the size 681 tag. We are taking this subject up with Mr. Hughes who has in prior correspondence actually expressed a preference for this type of locking mechanism. But here again, the practicality of the cost of new dies and equipment versus the demand for such a tag comes to play an important role.

We will keep you informed.

Yours truly,

NATIONAL BAND AND TAG COMPANY

*J. R. Haas*  
J. R. Haas

JRH:lc/1



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW

April 28, 1976

Mr. L.A. Yerkovich  
Senior Technical  
Coordinator  
Huntington Alloys, Inc.  
Huntington, West Virginia 25720

Dear Mr. Yerkovich:

This morning I received a most distressing telephone call from Mr. Haas of National Band and Tag Company indicating that there would be an 8-10 week delay in obtaining INCONEL alloy 625 from Huntington Alloys, Inc. This of course would mean that the new tags would not be available for the 1976 Hawaiian green sea turtle nesting season. I am suprised by this setback as in your letter of December 4 it was stated that INCONEL is a standart alloy manufactured by your company in all mill product forms.

Because of the vital importance of an early delivery date for the turtle tags, I wonder if you could personally investigate this situation and, if at all possible, speed up the transfer of the material to National Band and Tag Company. Your assistance in this matter would be most appreciated.

Sincerely,

GEORGE H. BALAZS  
Jr. Marine Biologist

GHB:le

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AIRCRAFT • RADIO • ELECTRICAL • MARINE • INDUSTRIAL USES

# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
PO Box 1346 Coconut Island  
Kaneohe, Hawaii 96744

June 17, 1976

"OUR 74th YEAR"

Attn: George H. Balazs

Replying to your communication dated June 9th inquiring about the status of the inconel tags, a telephone call to our material supplier indicates we can expect the inconel in our plant the latter part of July. If this delivery schedule does hold true, I believe we could make shipment of the tags to you the third or fourth week in August.

I have been phoning the material suppliers once a week for the last month trying to hurry him along.

Yours truly,

NATIONAL BAND AND TAG COMPANY

J. R. Haas

JRH:1c/1



# University of Hawaii at Manoa

Hawaii Institute of Marine Biology  
P.O.Box 1348 • Coconut Island • Kaneohe, Hawaii 96744  
Cable Address: UNIHAW

July 16, 1976

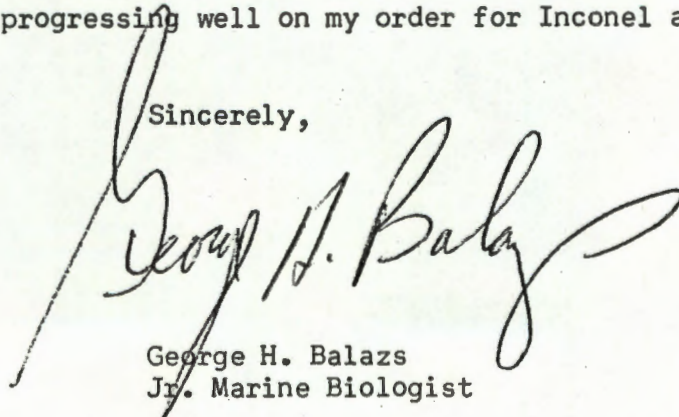
Mr. J.R. Haas  
National Band and Tag Company  
721 York Street  
Newport, KY 41072

Dear Mr. Haas:

I would greatly appreciate your assistance in helping me to solve a continuing problem in my ability to accurately interpret tag recoveries made from Hawaiian sea turtles. The problem centers around the fact that previous to the establishment of my own research program, two other agencies carried out taggings of both sea turtles and seals in Hawaii, using NBT size 49 Monel tags. Several orders for these tags were made with different inscriptions and, very likely, consecutive numbers that were repeated. The orders would have been placed by the Hawaii State Division of Fish and Game (perhaps as early as 1960) and also, beginning in the middle 1960's, by the U.S. Bureau of Sport Fisheries and Wildlife (Fish and Wildlife Service, Department of the Interior located in Kailua, Hawaii). Personnel has changed in these agencies and it would appear that records on the date of order and numbers and inscriptions are no longer in existence. Given this set of unfortunate circumstances, it is easy to see why confusion often results. Therefore, if at all possible, would you please locate in your records and send me xerox copies of the order sheets involved. I suspect that a total of not more than six will be found. Of course I am most willing to pay for whatever costs are incurred for searching and copying.

Hopefully, all is progressing well on my order for Inconel alloy tags.

Sincerely,



George H. Balazs  
Jr. Marine Biologist

GHB:le





Manufacturers of IDENTIFICATION TAGS for

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AIRCRAFT • RADIO • ELECTRICAL • MARINE • INDUSTRIAL USES

# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

Mr. George H. Balaza,  
Jr. Marine Biologist  
Hawaii Institute of Marine Biology  
UNIV. OF HAWAII  
P.O.Box 1364 Coconut Island  
Kaneohe, Hawaii 96744

July 28, 1976

"OUR 74TH YEAR"

Dear Mr. Balaza:

Thank you for your letter dated July 16th concerning previous orders for sea turtle tags.

We have searched our files and send copies of the orders we have been able to find, as follows:

035805		3/22/76
S24203		1/16/75
S19755		10/22/74
S4201		2/26/73
S2672	Bureau of Wildlife Kailua Hawaii	12/1/72 - T301-T500 and 2(S1101-51300)
944899	" "	7/26/71 - T1-T500
922290	" "	5/20/69 - 2(A901-A1100)
917219	" "	12/23/68 - 2(A601-A800)
889137	U.S. Wildlife Honolulu	5/28/65 - 1-200

We hope these will serve your required purpose. Thanks again for writing.

Sincerely yours

*J. R. Haas*  
J. R. Haas  
Manager

ED  
2

T101-T200  
IN OFFICE

• THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS •

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.

FILE CODE HAWAII UNIV. AT MANOA

4B1  
CLASS

SHIP TO:

1 1 4 JRH 1 PUNCH

CHIT:

HAWAII UNIV. AT MANOA  
INSTITUTE OF MARINE BIOL.  
P.O. BOX 1364 COCONUT ISLAND  
KANEHOE, HAWAII 96744

CUST. ORDER NO.

DATE

REQ.

1/26 & 2/4.24  
& 3/15/76

3/22/76

NB &amp; T ORDER NO. 035805

DATE ENTERED  
TERMS:

3/22/76

NET 30  
NPT., KY

FOB

CLASS

ORDER NO.

INVOICE DATE

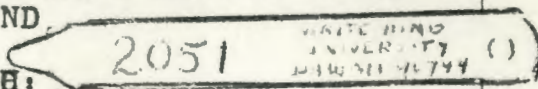
SHIPMENT

SHIPMENT REQ:

VIA:

INS 52  
PARCEL POST

ANTICIPATED WEEK ENDING: 6/25/76

UNIT PRICE	QUANTITY	REFER TO THESE NUMBERS WHEN YOU INQUIRE ABOUT THIS INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED	AMOUNT	LINE
207.50/M	2,000 (approx)	(4-1005) INCONEL 625, Size 681 Numbered: 2051 thru 4050 STAMPED "WRITE HIMB } 1/16" UNIVERSITY } size HAWAII 96744" }					
100.00-net	(1)	Die Alteration Charge.....  NUMBERS CENTERED ON FLAT SURFACE OF POINT END, READING LEFT TO RIGHT FROM THE POINT  STAMPING ON FLAT SURFACE OF THE HOLE END READING LEFT TO RIGHT TO HOLE END  SEE SKETCH: 					
10.35/ea	1	(4-1005-681S) Applicator  PLEASE CENTER CONSECUTIVE NUMBERS ON FLAT SURFACE AS BEST POSSIBLE  4/5/76: IF THERE IS EXTRA MATERIAL...CONTINUE MAKING BANDS...RUN THE MATERIAL OUT... PER JRH					

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 606 261-2035

BLUE - Factory  
WHITE - Shipping

PINK - Office  
ORANGE - State Acknowledgement

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDENROD COPY is the ORIGINAL INVOICE. Please refer to our invoice number and pay total itemized under **AMOUNT** below. (No statement will be sent).

FILE CODE: HAWAII-UNIV.-CONSV. DEPT.

CHARGE TO: (S. CHASTAIN)

HAWAII-UNIVERSITY-CONSV. DEPT.  
DISBURSING OFFICE  
UNIVERSITY OF HAWAII  
1627 BACHMAN PLACE  
HONOLULU, HAWAII 96822

SHIP TO:

HAWAII INSTITUTE OF MARINE BIOLOGY  
P. O. BOX 1346  
KANEOHE, HAWAII 96744

CUSTOMER ORDER NO. 563571 (S 24203)

NB&T ORDER NO. S 24203 (563571)

ITEM REQUESTED 2-21-75  
UPS / INS. 5 PP  
ITEM ANTICIPATED WEEK ENDING:  
2-21-75

CUSTOMER DATE 1-16-75 (2-3-75)  
REQ. NO.  
DATE ENTERED 1-24-75 (2-4-75)  
TERMS  
NET 30 CHARGE  
F.O.B. NPT., KY.

FACTORY NOTES

\* STAMP NUMBERS NEAR, BUT NOT ON BEND

O/B CLASS	C/T CLASS	BKPG	P/L	COP.	INV.	ANS.	ACK.
4AB	4AB	42	1	-	4	-	1

INVOICE DATE		SHIPMENT	
MO.	DA.	INV.	BO.

UNIT	QUANTITY	ORDER-INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED	AMOUNT
------	----------	---------------	--------------------	---------------	------------------	--------

500 (4-1005) MONEL SIZE # 681

NUMBERED: 1401 THRU 1900 \*

STAMPED  
NOTIFY UNIV. HAWAII,  
HIMB  
KANEOHE, 96744

(1) STAMP SET UP CHARGE

(4-1005-681S) APPLICATOR SIZE 681

\* STAMP NUMBERS NEAR, BUT NOT ON BEND, PER CUSTOMER'S REQUEST.

1401

Notify Univ. Hawaii  
HIMB  
KANEOHE, 96744

2-4-75  
RB

FEB 5 1975

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 606 251-2035

BLUE - Factory  
WHITE - Shipping

PINK - Office  
ORANGE - State Acknowledgement

YELLOW COPY is a reminder of your order placed last year. May we suggest you check your inventory? Can we be of service again?

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FILE CODE: HAWAII-UNIVERSITY-CONSERVATION DEPT.  
CHARGE TO: (S. CHASTAIN)  
  
HAWAII-UNIVERSITY-CONSERVATION DEPT.  
DISBURSING OFFICE  
UNIVERSITY OF HAWAII  
1627 BACHMAN PLACE  
HONOLULU, HAWAII 96822  
CUSTOMER ORDER NO. 563353 (S19755)

SHIP TO:  
  
HAWAII INSTITUTE OF MARINE BIOLOGY  
ATTN: BALAZS  
P.O. BOX 1346  
KANEOTE, HAWAII 96744  
  
NB&T ORDER NO. S19755 (563353)

SHIPMENT REQUESTED  
  
INS. 5 P.P.  
  
SHIPMENT ANTICIPATED WEEK ENDING:  
  
12-6 -74 PER DON B.

CUSTOMER DATE 10-22-74 (11-15-74)  
REQ. NO.  
DATE ENTERED 10-31-74 (11-18-74)  
TERMS CHARGE  
NET 30 NPT.  
F.O.B.

FACTORY NOTES  
\*\* CUST. REQUEST SERIAL NO. PLACED PER DRAWING BELOW.

INVOICE DATE								SHIPMENT			
O/B CLASS	C/T CLASS	BKPG	P/L	COP.	INV.	ANS.	ACK.	MO.	DA.	INV.	BO.
4AB	4AB	42	1	-	4	--	1				

QUANTITY	ORDER-INVOICE	QUANTITY BACK ORD.	INVOICE PRICE
500	(4-1005) MONEL NUMBERED: 901 THRU 1400 STAMPED NOTIFY UNIV. HAWAII MARINE LAB, BOX 1346 KANEOTE, HAWAII USA  (1) STAMP SET UP CHARGE  CUSTOMER'S SAMPLE ATT. FOR REF., CAUTION DIFFERENT STAMPING.  ** CUST. REQUEST SERIAL NUMBER BE MOVED CLOSE TO BEND (BUT NOT ON THE BEND) AWAY FROM THE POINTED EDGE OF TAG.  ** TOB NOTIFY UNIV. HAWAII MARINE LAB, BOX 1346 KANEOTE, HAWAII USA		

NOV 22 1974

# NATIONAL BAND & TAG CO.

GENERAL OFFICES - 721 YORK ST. • NEWPORT, KY. 41072 U.S.A. • AREA CODE 506 261-2035

GRAY - Factory  
WHITE - Shipping

PINK - Office  
ORANGE - State Acknowledgement

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GOLDENROD COPY is the ORIGINAL INVOICE. Please refer to our invoice number and pay total itemized under below. (No statement will be sent).

FILE CODE: HAWAII - UNIVERSITY CHARGE TO: (S. CHASTAIN) UNIVERSITY OF HAWAII DISBURSING OFFICE 1625 BACHMAN PLACE HONOLULU, HAWAII 96822	SHIP TO:  HAWAII INSTITUTE OF MARINE BIOLOGY P.O. BOX 1346 KANEOHE, HAWAII 96744
CUSTOMER ORDER NO. 364755	NB&T ORDER NO. S-4201 364755

ORDER REQUESTED 3-30-73  INS. 5 P.P. AIR MAIL  ORDER ANTICIPATED WEEK ENDING: 4-20-73  earlier manufacturing schedule sooner if possible!!	CUSTOMER DATE 2-26-73(3-12-73) REQ. NO. -- 3-23-73 DATE ENTERED 3-14-73 TERMS CHARGE NET 30 NPT. F.O.B.	FACTORY NOTES  Send ack. AIR MAIL																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">INVOICE DATE</th> <th colspan="2">SHIPMENT</th> </tr> <tr> <th>MO.</th> <th>DA.</th> <th>IN.</th> <th>SO.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	INVOICE DATE		SHIPMENT		MO.	DA.	IN.	SO.								
INVOICE DATE		SHIPMENT																
MO.	DA.	IN.	SO.															
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O/B CLASS	C/T CLASS	BKPG	P/L	COP.	INV.	ANS.	ACK.											
4AB	4AB	40	1	-	4	-	*1											

UNIT	QUANTITY	ORDER-INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED
		<b>No. 4201</b>			
	300	(4-1005) MONEL SIZE # 49			
	NOS.	<div style="border: 2px solid red; border-radius: 50%; padding: 5px; display: inline-block;">601 - 900</div> ✓ STAMPED HIMB, Box 1346-2 UNIV. HAWAII BOX 1346 KANEOHE, 96744-3			
	(1)	STAMP SET UP CHARGE			
	(1)	MAKE READY CHARGE			
	1	(4-1005-4PS) POW-R-CEPS			

APR 13 1973

GRAY - Factory  
WHITE - Shipping

PINK - Office  
ORANGE - State Acknowledgement

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GREEN COPY is an ACKNOWLEDGMENT of your order. Please review the specifications and advise if not correct. Thank you!

GOLDEN ROD COPY is the ORIGINAL INVOICE. Please refer to our invoice number and pay total itemized under [ ] below. (No statement will be sent).

FILE CODE: HAWAII-USDI-CONSV. DEPT. CHARGE TO: HAWAII-USDI-CONSV. DEPT. BUREAU OF SPORT FISHERIES & WILDLIFE 337 ULUNI STREET KAILUA, HAWAII 96734	SHIP TO:
CUSTOMER ORDER NO. SFWB64768 <sup>*</sup> S-2672	NB&T ORDER NO.

SHIPMENT REQUESTED 2/2/73	CUSTOMER DATE <u>12/1/72</u> 1/12/73 REQ. NO.                                    ANS. REC.	FACTORY NOTES *NOTE: HALF OF STAMP IN EACH BLOCK.																												
SHIPMENT ANTICIPATED WEEK ENDING: 2/2/73	DATE ENTERED 1/15/73 TERMS CHARGE NET 30 F.O.B. NPT.																													
<table border="1"> <thead> <tr> <th>O/B CLASS</th> <th>C/T CLASS</th> <th>BKPG</th> <th>P/L</th> <th>COP.</th> <th>INV.</th> <th>ANS.</th> <th>ACK.</th> </tr> </thead> <tbody> <tr> <td>4AB</td> <td>4AB</td> <td>41</td> <td>1</td> <td>-</td> <td>3</td> <td>-</td> <td>1</td> </tr> </tbody> </table>		O/B CLASS	C/T CLASS	BKPG	P/L	COP.	INV.	ANS.	ACK.	4AB	4AB	41	1	-	3	-	1	<table border="1"> <thead> <tr> <th colspan="2">INVOICE DATE</th> <th colspan="2">SHIPMENT</th> </tr> <tr> <th>MO.</th> <th>DA.</th> <th>IN V.</th> <th>PC.</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	INVOICE DATE		SHIPMENT		MO.	DA.	IN V.	PC.				
O/B CLASS	C/T CLASS	BKPG	P/L	COP.	INV.	ANS.	ACK.																							
4AB	4AB	41	1	-	3	-	1																							
INVOICE DATE		SHIPMENT																												
MO.	DA.	IN V.	PC.																											

QTY	UNIT PRICE	QUANTITY	ORDER-INVOICE	QUANTITY BACK ORD.	INVOICE PRICE	QUANTITY SHIPPED
200		(4-1005)	MONEL <u>SIZE #49</u> FOR TURTLES			
NOS.		<u>T301 - T500</u>				
(1)		STAMP SET-UP CHARGE	STAMPED BUREAU WILDLIFE KAILUA, HAWAII			
400		(4-1005)	MONEL <u>SIZE #49</u> FOR MONK SEALS			
NOS.		<u>2(S1101 - S1300)</u>				
(1)		STAMP SET-UP CHARGE	STAMPED BUREAU WILDLIFE KAILUA, HAWAII			
(1)		MAKE READY CHARGE				
<p>NUMBERS AT POINT END AT LEAST 3/4" OF CLEAR SPACE SHOULD BE LEFT AT THE HOLE END OF TAG SO CUST. CAN HAND STAMP DUPLICATE NUMBER. (MAKES NO DIFFERENCE IF SOME OF THE LETTERING OCCURS ON THE BEND OF THE TAG AFTER FORMING.)</p>						
		*(PREFIX BLOCK)	(STAMP BLOCK)			
		BUREAU KAILUA	WILDLIFE HAWAII			

FEB. 2 1973

2001 BUREAU WILDLIFE  
KAILUA HAWAII

2/2-2-73  
RB

OCTOBER 67

ORDER COPY

EUGENE KRITLER, WLOF, ADMP.

PKPG	F/L	S/W	COPIES	INV	ACC	AMS
41	1					

O/B CLASS	C/T CLASS	MAILING INST.	W/L
325	47		

CUSTOMER ORDER NO. DATE REQUISITION NO. DATE ENTERED TERMS NET 30 F O B.

3785 54177 7/26/71 7/30/71 (NAME) (SMT)

CHARGE TO

S/T

SHIPMENT	
REQUESTED	BY 8/6/71
PROMISED	
ANTICIPATED	WORK ENDING 8/27/71
ORDER NUMBER	INVOICE DATE
444899	
MO. DA	INV BO

SALESMAN A/C -		COMMISSION THIS SHIPMENT
%	ITEMS	
%	ON AMT.	

SHIP TO

HAWAII WSDI-BONAV. DEPT.  
 BUR. OF SPORT FISHERIES & WILDLIFE  
 537 ULUKU STREET  
 KAILUA, HAWAII 96734

ZONE REQUESTED ROUTING

INS - AIR (7) P. P.

QUANTITY & NO. SERIES	SPECIFICATIONS	UNIT PRICE	QUANTITY BACK ORD.	INVOICE PRICE	COMPLETED & INVOICED
500 NOS.	(4-1005) MONEL SIZE #49	1.15/6			
(1)	STAMP SET UP CHARGE STAMPED BUREAU WILDLIFE KAILUA, HAWAII	.50/lot			
(1)	MAKE READY CHARGE SEE SKETCH ATTACHED	2.00/lot			
<p>NUMBERS OF POLICE TAGS BY LEAST 5/8" BY CLEAR SPACE SHOULD BE LEFT AT THE HOLE END OF TAG SO CUSTOMER CAN HOLD STAMP WITH DATE NUMBER (MAKES NO DIFFERENCE IF SOME OF THE LETTERING OCCURS ON THE END OF THE TAG AFTER FORMING)</p> <p>#(PREFIX BLOCK) (STAMP BLOCK)</p> <p>COIL BUREAU WILDLIFE KAILUA HAWAII</p> <p>(REF. 922290) ATTACHED (TO BE USED ON SEALS &amp; TURTLES)</p>					

No material

DITTO MASTER

HAWAII- USDI-CONSV.DEPT.

S/T

David L. Olsen, Refuge Mgr. Ass't.

BKPG	P/L	S/M	COPIES	INV.	ACK	ANS
5B	1	-	-	2	1	ED JEM

O/B CLASS	C/T CLASS	MAILING INST.	W/U
4AB	5B		JH

CUSTOMER ORDER NO. DATE REQUISITION NO. DATE ENTERED TERMS: NET 30 F. O. B. CHARGE NPT.

SFWB35707

5/20/69

5/28/69

5/21/69-OLSEN

ED: ans. high cost of double numbers. *Ma*

CHARGE

S/T

SHIPMENT

REQUESTED

6/1

PROMISED

ANTICIPATED

WEEK ENDING 6/13

SALESMAN A/C -

%

ITEMS

ORDER NUMBER

INVOICE DATE

SHIPMENT

%

ON AMT.

COMMISSION THIS SHIPMENT

9

22290

6,016,

.69

MO. DA INV BO

ONE REQUESTED ROUTING

INS 6 PP

QUANTITY &amp; D. SERIES

SPECIFICATIONS

UNIT PRICE

QUANTITY BACK ORD.

INVOICE PRICE

QUANTITY SHIPPED

AMOUNT

L  
H  
T

400

(4-1005) MONEL

SIZE #49

11.00/C

11.00 C

400,

44.00

Nos. 2 (A901-AL100)

(1) Stamp set up charge

STAMPED

3.50/lot

3.50

1,

3.50

"BUREAU WILDLIFE  
KAILUA, HAWAII"

Nos. at point end

AT LEAST 3/4" OF CLEAR SPACE SHOULD BE LEFT AT THE HOLE END OF TAG SO CUST.

CAN HAND STAMP DUPLICATE NUMBER

(makes no difference if some of the lettering occurs on the bend of the tag after forming)

(1) Make ready charge A/C LESS THAN 1M TAGS

12.00/lot

12.00

1,

12.00

2

(4-1005-4PS) POW-R-CEPS

4.80/ea

4.80

2,

9.60

\*(prefix block) (stamp block)

106 V BUREAU WILDLIFE  
KAILUA, HAWAII2.75+PP  
.40+IN

69.10

(REF. 917219 ATTACHED)

72.25

(to be used on Seals &amp; Turtles)

16



## DITTO MASTER

HAWAII-USDI-CONSV. DEPT.

C/T

Eugene Kridler,

BKPG	P/L	S/M	COPIES	INV.	ACK	ANS
5B	1	-	-	3	1/ct	-

O/B CLASS	C/T CLASS	MAILING INST.
11AB	5B	

CUSTOMER ORDER NO. DATE REQUISITION NO. DATE ENTERED TERMS: NET 30 F.O.B.  
 SFWB35693 12/23/68 12/27/68 CHARGE NPT.

1/7/69 re-entered 1/10/69  
 1/16/69 re-entered 1/20/69

HAWAII-USDI-CONSV. DEPT.

U.S. Department of Interior  
 Bureau of Sport Fisheries & Wildlife  
 P.O. Box 698

Kailua, Hawaii 96734

HAWAII-USDI-CONSV. DEPT.

Wildlife Administrator

Bureau of Sport Fisheries &amp; Wildlife

P.O. Box 698

Kailua, Hawaii 96734

SHIP TO

ONE REQUESTED ROUTING

INS 4 AIR PP \*

## SHIPMENT

REQUESTED

1/24

PROMISED

ANTICIPATED 2/14

WEEK ENDING 1/24/69

ORDER NUMBER

INVOICE DATE

SHIPMENT

9

17219

MO. 1,031 DA

INV 69 BO

SALESMAN A/C -

%

ITEMS

%

ON AMT.

COMMISSION THIS SHIPMENT

QUANTITY &amp; D. SERIES

SPECIFICATIONS

UNIT PRICE

QUANTITY BACK ORD.

INVOICE PRICE

QUANTITY SHIPPED

AMOUNT

400<sup>d</sup>

(4-1005) MONEL

SIZE # 49

11.00/c

11.00 C 400, 44.00 +

Nos. 2(A601-A800)

(1) Stamp set up charge

3.50/lot

3.50 1, 3.50 +

DAMPED?

"BUREAU WILDLIFE  
KAILUA, HAWAII"

Nos. at point end

AT LEAST 3/4" OF CLEAR SPACE SHOULD BE  
 LEFT AT THE HOLE END OF TAG SO CUST. CAN  
 HAND STAMP DUPLICATE NUMBER

(makes no difference if some of the  
 lettering occurs on the bend of the  
 tag after forming)

(to be used on seals &amp; turtles)

(1) MAKE READY CHARGE A/C LESS THAN 1M TAGS

\$12.00/LOT

12.00 1, 12.00 +

109A BUREAU WILDLIFE  
KAILUA, HAWAII

7.28+PP  
.30+IN

59.50

67.08

CUSTOMER NOTE: DIE BREAKING-IN PROCESS OF MAKING  
 NEW DIE--  
 RE-SCHEDULING SHIPMENT OF YOUR  
 ORDER-WK. ENDING 2/14

HAWAII-USDI-CONSV.DEPT.

S/T EUGENE KRIDLER, WILDLIFE ADMIN.

ORDER COPY

BKPG	F/L	S/M	COPIES	INV	ACK	ANS
53	1	-		2	1	ST

O/B CLASS	C/T CLASS	MAILING INST.
440	50	DEPT. FILE S/T CARD & PLATE

CUSTOMER ORDER NO. DATE REQUISITION NO. DATE ENTERED TERMS: NET 30 F O B.  
 SFWB 42635 5/28/65 6/4/65 CHARGE NPT.

\* SEND 4A64-1638 CIR. WITH AC TO ATTN: EUGENE KRIDLER WILDLIFE ADMINISTRATOR

HAWAII-USDI-CONSV.DEPT.

HAWAIIAN ISLAND NATIONAL WILDLIFE REFUGE  
 U.S. BUREAU OF SPORT FISH. & WILDLIFE  
 400 S. BERETANIA ST.  
 HONOLULU, HAWAII 96813

SHIPMENT REQUESTED  
 FE SOON AS POSSIBLE

HAWAII-USDI-CONSV.DEPT.

REFUGE MANAGER  
 HAWAIIAN ISLANDS NATL. WILDLIFE REFUGE  
 U.S. BUREAU SPORT FISH. & WILDLIFE  
 400 S. BERETANIA ST.  
 HONOLULU, HAWAII 96813

PROMISED ANTICIPATED APPROX. WK. ENDING 6/11-6/19

SALESMAN A/C -		
%	ITEMS	
%	ON AMT.	COMMISSION THIS SHIPMENT

CHARGE TO

SHIP TO

ZONE REQUESTED ROUTING

INS. 2-P.P.

ORDER NUMBER INVOICE DATE SHIPMENT  
 NO 859137

QUANTITY & NO. SERIES	STYLE-DESCRIPTION-MAT'L-SIZE	STAMPING & COLOR	QUANTITY BACK ORD.	UNIT PRICE
-----------------------	------------------------------	------------------	--------------------	------------

200 (4-1005-49) MONEL SIZE #49

Nos. 1-200

(1) STAMP SET-UP CHARGE

STAMPED "U.S. WILDLIFE HONOLULU"

\$10.00/C

\$ 3.00/LOT BY.

COMPLETED & INVOICED

DATE COMPLETED

PART SHIP. RECORD

DATE SHPG. WT. POSTED BY

1 (4-1005-49S) PLIER FOR SEALING ABOVE TAGS

(FOR USE ON SEA TURTLES)

\$2.90/EA.

PREPAID TRANSP. CHARGES...



Manufacturers of IDENTIFICATION TAGS for

AGRICULTURE • HORTICULTURE • BIOLOGICAL • SCIENTIFIC RESEARCH

AIRCRAFT • RADIO • ELECTRICAL • MARINE • INDUSTRIAL USES

# NATIONAL BAND AND TAG COMPANY

Established 1902 • • GENERAL OFFICES: 721 YORK ST. NEWPORT, KY. 41072 U. S. A. • • Phone: Area 606 - 261-2035

- University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O.Box 1346, Coconut Island  
Kaneohe, Hawaii 96744

September 15, 1976

"OUR 74th YEAR"

Attn: George H. Balazs

Dear Mr. Balazs:

Enclosed are two sample tags taken from the first run production of the inconel material. Your order will be completed and shipped this week. We expect to get approximately 3000 tags.

We found the inconel material very tough, more so than the monel or stainless steel, which resulted in some extensive die modifications including .015" more stroke pressure just to satisfactorily indent the letters and numbers. Other than the toughness of the material, we are unable to differentiate these tags from monel.

No doubt, the mill did the best they could in supplying this small quantity of inconel, but we experienced extreme camber and lateral bow in the material; twists and overlapping folds, all of which required hand straightening before the material could be properly fed into the presses.

As to future production of inconel tags, we are just not sure at this point. We will have to work with the mill on these areas of discrepancy and if they can't be remedied, then future production of inconel would be out of the question. We are certain that only tags with a locking device similar to the size 681 (such as represented by the enclosed samples) can be fabricated from inconel. A closed housing bridge type locking device as presently used in our size 49 tag definitely would be out for inconel production.

We are sorry we were unable to place any type of memorial for Mr. Harrison on the tags.

We hope the inconel will provide as good service as the mill claims, if it does, it all will be worth the hassle.

Yours truly,

NATIONAL BAND & TAG COMPANY

J. R. Haas

JRH:1c/2

• THE WORLD'S LARGEST AND OLDEST MANUFACTURERS OF POULTRY BANDS AND LIVESTOCK TAGS •

All quotations and orders are entered subject to Federal Regulations, Government Priorities, and conditions beyond our control.

# ISLAND RESOURCES FOUNDATION

September 20, 1976

Dr. N. Mrosovsky  
Departments of Zoology and Psychology  
University of Toronto  
Toronto M5S 1A1 Canada

Dear Dr. Mrosovsky:

Having looked over the first Marine Turtle Newsletter with great interest, I would like to throw in some additional information on the tag loss question.

At Isla Aves, where I have been tagging since 1971, tag loss through failure of monel cattle ear tags is a major problem. For example, last year, we had two remigration returns with tags and twenty without. The latter were unquestionable tag losses which carried a callous with a central perforation in the area we normally position the tag. Additional possible tag losses with flippers torn or suspiciously scarred in that area were tallied separately.

This rate of loss does not reflect poor application techniques. Because of the small number of turtles handled each season (150-200), each tag is examined for proper clenching before an animal is released. As an aside, the number of tags damaged in application has been reduced by prepunching a hole through the flipper with a modified Vice Grip welding clamp. This is a quick procedure and almost assures proper clenching.

Based on the use of a fairly permanent secondary mark, the rate of tag loss during our brief tagging season at the nesting site (3-6 weeks) is almost nil, contrary to Schulz's experience. Since the tag loss problem became apparent two years ago, we have been cutting coded notches in the marginal bones using a simple system derived from my computer work, which permits individual recognition of animals independent of the monel tags. Whether these notches will persist over a remigration interval remains to be seen, but particularly on animals whose plastral seams are obliterated (i. e., essentially no growth) it seems likely that they will.

As you saw from the pictures at Jensen Beach, we have also painted the tag number on the carapace of nesting females with lacquer-based spray paint to facilitate recognition underwater. The persistence of these marks is quite

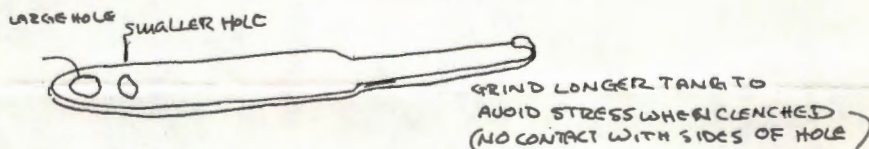
Dr. N. Mrosovsky  
September 20, 1976  
page 2

low, generally only a few days, and they are clearly lost to abrasion. Whether this is exclusively from the action of wave surge in rocky shelters or partly results from repeated mating is not apparent.

The sample of recovered tags I have examined is small, but at least one shows significant corrosion and in another the clenched tip appeared to have been gradually straightened out. A significant proportion of smaller tags (chicken-wing) of the same style which were applied to animals held in captivity for a year showed corrosion and some were ready to break in the portion of the tag embedded in the flipper tissue.

Correspondence on these issues and the question of Inconel tags with National Band and Tag Company was unsatisfactory and lead me to do a bit of research and consult a metallurgy/heat treating specialist (J. Carter). The overall impression is that in a corrosive environment like sea water the monel tags in common use today are designed to self destruct at the small retaining bar which holds the clenched tip of a closed tag. Corrosion is excited at sharp, deformed corners, such as are adjacent to the bar and will produce cracks, eventually causing it to break away. The implication in the Newsletter that some sort of relative motion is necessary for crack formation is erroneous, but it would accelerate the process.

The form and mode of application of the present tag are convenient, but it needs to be redesigned so that there are no sharp corners in the closure. A minimum modification approach would be to lengthen the tang which is clenched and put round holes in the lower bar (see sketch).



A change of materials for the tag would be beneficial, but would not eliminate tag need for redesign. Contrary to the statement in the Newsletter, the present alloy, monel, Inconel, and a third Chromel A (which was suggested to me as the most resistant) all contain substantial amounts of nickel:

	Fe	Mn	Cu	Ni	Cr
Monel	1.5	1.0	20	67	
Inconel	5			80	15
Chromel A				80	20

Inconel work hardens rapidly so probably some modifications of the curr-

Dr. N. Mrosovsky  
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page 3

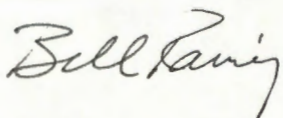
ent tag-making process would be required. I do not favor a shift to a plastic tag, because, despite the superior resistance of some plastics to sea water, they are vulnerable to abrasion long-term.

Temporarily setting aside the option of modifying tags on hand to the pattern above with drill and file, there is one relatively simple tag modification which is at least palliative, if not genuinely constructive. I presume, but do not know, that the monel tags currently sold are not bright annealed after they are stamped out. Simple annealing should reduce the brittleness of the tag retaining bar which I have heard people complain about. Heating the tags to 1600<sup>o</sup> - 1800<sup>o</sup> F for approximately one minute (in a laboratory muffle furnace) and allowing them to quench in air should relieve the high stresses induced around the bar during forming and does result in a blue-grey coat of protective oxides. If this coating persists it may help to protect the tag and might dampen complaints I have received that shiny tags increase the likelihood of predation on small turtles. I have done this to all the tags we are using this year, but realizing this does not affect corrosion due to design errors mentioned earlier, am continuing to investigate the possibility of redesign.

My recollections of it are a bit vague now, but I viewed askance Hirth and Schaeffer's Copeia note modeling hatchling survival. Aside from a somewhat patronizing tone, it seems to me that it assumes without much discussion that the exceedingly high rates of adult mortality postulated (which are based on human-exploited populations) represent a sustainable condition. Thus, I wonder about the relevance of their calculations to conservation programs without an effort to also vary adult survival in the model.

The Newsletter represents a valuable forum. I am glad you have committed the time to preparing it.

Sincerely yours,



William E. Rainey  
Island Resources Foundation

cc: George Balazs



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University of Hawaii at Manoa  
Hawaii Institute of Marine Biology  
P.O. Box 1346 Coconut Island,  
Kaneohe, Hawaii 96744

September 28, 1976

"OUR 74th YEAR"

Attn: George H. Balazs, Jr. Marine Biologist

Dear Mr. Balazs:

Thank you for your letter of September 22nd, shipment of the 3000 Inconel tags went forward on September 17th via Parcel Post in one carton weighing 29 pounds, Government Insured No. 29-27727. We do hope the shipment arrives without difficulty. Invoices were mailed to you on September 18th.

To clarify my reference to "stainless steel tags", some years back, we did attempt production of both the size 681 and size 49 tags from stainless steel and, there again, we found the material to be incompatible with our equipment because of its toughness or strength. It was much harder to work than either regular steel or monel. As sample lots of stainless steel were much more easily procured, we experimented with various alloys and tempers but, eventually, the idea was shelved because of the problems and interruptions to our normal production that evolved. We have not given any consideration of our resumption into the stainless steel experimentation because of this prior experience.

Thank you for your interest.

Yours truly,

NATIONAL BAND AND TAG COMPANY

J. R. Haas

JRH:lc/1

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# University of Hawaii at Manoa

Hawaii Institute of Marine Biology

P.O.Box 1346 • Coconut Island • Kaneohe, Hawaii 96744

Cable Address: UNIHAW

September 30, 1976

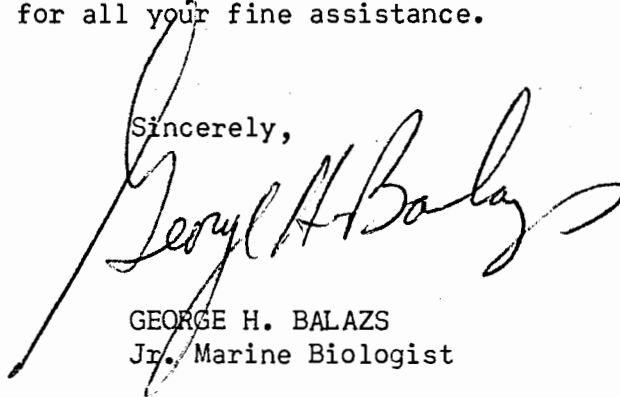
Mr. J.R.Haas  
National Band and Tag Company  
721 York Street  
Newport, KY 41072

Dear Mr. Haas:

This is to inform you that payment for my INCONEL 625 order will be made by purchase order no. 431-0001 from The Research Corporation of the University of Hawaii, RM. 402 Varsity Building, 1110 University Ave., Honolulu, Hawaii, 96814. A new invoice will have to be sent to this agency indicating the number I have given you.

Again, thank you for all your fine assistance.

Sincerely,



GEORGE H. BALAZS  
Jr. Marine Biologist





UNIVERSITY OF GEORGIA

INSTITUTE OF ECOLOGY

ATHENS, GEORGIA 30602

TELEPHONE 542-2968

January 24, 1977

Mr. G.H. Balazs  
Institute of Marine Biology  
P.O. Box 1346  
Kaneohe, Hawaii, U.S.A.

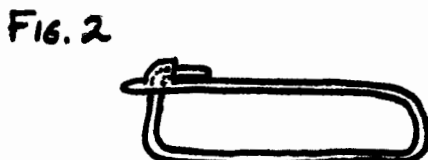
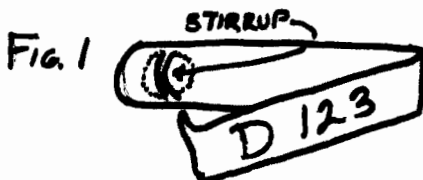
Dear Mr. Balazs:

I have received your request for reprints of the loggerhead papers and will send copies to you as soon as I receive them from the printer.

I read the section on tag loss in the Marine Turtle Newsletter with considerable interest. We began with monel tags in 1964 on Little Cumberland Island, Georgia from stock issued to us by Archie Carr. We have sustained greater than 90% loss after an interval of two years on a turtle. Although we have also retaken the occasional tag looking like "lace" or "swiss cheese", we believe virtually all of our losses have occurred when the stirrup on the female end of the tag (Fig. 1) broke off at the attachment points which happen to be very brittle from the effects of the stamping procedure. The stirrup will snap off with only a slight pressure applied to it, even on a new tag.

We then went to the Jumbo Rototags from Henley, England and received excellent results of at least six years staying power on a turtle. Unfortunately, we only ordered several hundred. Our second order was refused, with instructions to contact the Rototag Company in the U.S. The U.S. tags have been worthless, many not even lasting the initial season before numbers were eroded beyond recognition. Separation of the two parts and breakage of the U.S. tags are common and unacceptable. Last year we returned to monel, in addition to nylon, but we have altered the monel tags by removing the stirrup and flattening one half of the raised portion on the female end of the tag (Fig. 2). This permits the male end of the tag to pass through the female end and clamp on the outside of the tag. We can only wait and see.

Meanwhile, I would be very interested in participating in a common order for the Inconel (Iconel?) tag. I think the combined South Carolina and Georgia projects could afford at least 2000 tags on a first order.



Sincerely yours,

*James Richardson*  
James Richardson  
Little Cumberland Island  
Loggerhead Research Project

*will do it -  
carry it  
#681  
seals*

*booklet  
sent*

February 4, 1977

Mr. James Richardson  
Little Cumberland Island  
Loggerhead Research Project  
University of Georgia  
Institute of Ecology  
Athens, Georgia 30302

Dear Mr. Richardson:

Thank you for your interesting and informative letter of 24 January. It is unfortunate that we did not establish communications six months ago, as the special order for INCONEL 625 alloy tags has already been completed. Both Jim Haas of NBT and myself contacted a number of turtle (and seal) researchers with the goal of a combined order. Strangely enough, there was little interest and I ended up being the only one to make a financial commitment for the production of these new tags. I now have 3,000 size 681 tags. Size 681 was chosen because of my focus on juvenile wild green turtles, and also for the simplified locking mechanisms. Additionally, it was discovered that the machinery at NBT for size 49 tags could not be easily modified to accept the more brittle INCONEL 625 alloy strip. Jim Haas had a very difficult time filling this special order and I have the highest praise for his efforts on my behalf. In fact, it was so difficult, that I may have the only INCONEL tags that will be manufactured for some time to come. Only time will tell if they represent a significant improvement.

Concerning some of the comments made in your letter:

1. My experience with Hawaiian green turtles indicates that the stirrup (or "bridge" as NBT calls it) can completely fail and the tag will often still remain well attached to the animal. I have recovered several tags that were not properly locked when originally applied, but nevertheless remained firmly attached for over eight years. I even had a difficult time getting them off with pliers! Your tags may have corroded away or have been removed by other turtles, but I would speculate that stirrup failure was not a significant loss factor.

Mr. James Richardson  
Page Two  
February 4, 1977

2. It is my understanding that size 49 tags are made with an internal locking mechanism so as to not present a snagging site on the outside of the tag. When the piercing end passes through the hole and bends over, a snagging site is produced. This can create problems for cattle (catching on wire fences?), and seals where the tag can get hung up in a fish net. I discussed this stirrup problem with Jim Haas sometime ago, and I feel fairly certain that with a large enough order he would modify his machinery and make the size 49 tags with the simplified pass through locking mechanism. You may want to explore this possibility.

3. Many of my turtles are recovered bearing partially crushed tags. This may be from other turtles, the turtle biting its own tag, or from puffer or other bony fish with powerful jaws. Because of such observations (also reported by Hughes in South Africa and Limpus in Australia), I would not want to use plastic tags.

Again, I appreciate the information you have passed on to me about your tagging work. The only question I have is, where exactly do you place your tag or tags on the limb of the turtle, and also do you prepunch a hole before tag application? Hopefully at some date in the future we will be able to meet in person and discuss other topics of common interest.

Sincerely,

George H. Balazs  
Jr. Marine Biologist

mk

Enclosure



UNIVERSITY OF GEORGIA

INSTITUTE OF ECOLOGY

ATHENS, GEORGIA 30602

TELEPHONE 542-2968

March 15, 1977

Mr. George H. Balazs  
Hawaii Institute of Marine Biology  
P.O. Box 1346  
Coconut Island  
Kaneohe, Hawaii 96744

*good results  
developed over  
12 years of  
conscientious research*

Dear George:

Thanks for your letter and your book on Hawaii's Seabirds, Turtles, and Seals. Scientists are supposed to be objective, but you cannot believe how envious I am of your experiences in the Hawaiian Islands NWR. Besides sea turtles in general, I am a bird bander and have banded Sooty and Common Noddy Terns on the Dry Tortugas (Gulf of Mexico) with Dr. Bill Robertson of the Everglades National Park. I saw occasional White-capped Noddies (we call it Black Noddy) but could not find a nest. Anyway, as I read your book, I can smell those islands lying there in the Pacific sun as if I had been there, sans seals. This letter is beginning to sound like a job application (it is not!), but do you ever take anybody with you on those visits to the French Frigate Shoals?

*Florida  
Museum  
D. Williams*

I understand that the Jensen Beach Proceedings may not be published until the summer of 1978, so I enclose abstracts of the papers given by our Cumberland Island group. With a little luck, I may get copies of the full papers in the near future and will send them to you.

If I had known of your Inconel order, I could have used a thousand, even size #49. Anyway, we will stick with the monel for now. Thank you for the reference to Jim Haas; I have written him about the altered locking mechanism on the size #625. I still believe the majority of our tags are lost at the bridge which, if gone, would allow another turtle or fish to pull off a sprung tag (as you suggest). Similar to your experience, I had one sprung tag which was most difficult to remove, but I have had several others which fell off in my hand when they were rotated in the hole of the flipper. We now partially crimp the rounded end of the tag after application so that it will not spring open after the bridge is lost. I feel that this plus the outside locking mechanism will help us. I do not worry too much about snagging sites since the only nets in our area are trawlers. In response to your questions, we have rarely found crushed tags, although some have returned with tooth marks. We tag through one of the leathery pads on the proximal posterior edge of the flipper, and we always prepunch the hole with a standard leather punch or a sharpened chisel. We began using a pointed scalpel blade, changed each evening, last summer, and this seemed to work very well with the #625 monel, causing virtually no disturbance to the turtle. In contrast, a leather punch really hurts and may cause the turtles to become jumpy.

*psg  
removed  
vs  
slit*

Sincerely yours,

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James I. Richardson  
LCI Loggerhead Research

# QUOTATION SHEET

**National Band & Tag Co., Newport, Ky.** - 721 York Street . . Area Code 606

DATE May 9, 1977

41072

Phone 261-2035

Reference Your letter of May 2, 1977

University of Hawaii at Manoa  
 P.O. Box 1346  
 Coconut Island  
 Kaneohe, Hawaii 96744

Attn: George H. Balazs, Jr. Marine Biologist

**We Propose to furnish the following subject to the Provisions and Prices Stated Hereon.**

On 10 days notice to the buyer, all quotations on contracts are subject to adjustment upon the enactment of any State or Federal legislation imposing a sales tax or limiting hours of labor, or production. In event of such development the buyer reserves the privilege to cancel any unfabricated balance of his contract. All Orders are accepted with the mutual understanding that they are not subject to cancellation after in the process of fabrication—unless we are reimbursed for the material and labor involved. All agreements are contingent upon Strikes, Accidents, Fires or Causes Beyond Our Control.

1000	Style 4-1005 Monel metal tags, size 3 .....	\$45.40
	Numbered: 6001-7000	
(1)	Stamp set-up charge: "WRITE UNIV (*) HAWAII 96744"	3.50

(\*) We will try to stamp the tags as specified in 1/32" type, however, this will be difficult to read as it is very near pushing it over capacity with the 4 digit number. We would recommend omitting the zip code if at all possible, as we have learned that loading the tag with letters and numbers to near capacity often effects the functioning of the tag.

1000	Style 4-1005 Monel metal tags, size 1 .....	45.40
	Numbered: 7001-8000	
(1)	Stamp set-up charge: (**)	3.50

(\*\*) The stamping you specify "HAWAII" exceeds our stamping limitations for the size 1 tag. Normally, we have room for a 9 digit letter and number combination with a maximum 5 digit number that would leave 4 digits for the letters; when we furnish the maximum stamping, the letters and numbers run the entire length of the tag on and around the elbow, etc. We have furnished more stamping on the size 1 tag by having a special logo made as shown by the "BIO SUNY BFLO." tag enclosed. If you want us to have a special logo made, we can do so at an approximate cost to you of \$75.00/

1	Style 4-1005-3S Plier .....	9.70
1	Style 4-1005-1S Plier .....	9.70
		117.20
	Estimated transportation ...	3.50
		120.70

Page 2

University of Hawaii at Manoa  
Kaneohe, Hawaii  
George H. Balazs

Terms: Net 30 days, pricing is FOB Newport, Kentucky.

Shipment: Approximately 4 weeks after receipt of order.

Remarks: You were correct in your assumption that we would not be able to arrange for production of these tags in the Inconel 625 material, therefore, we are quoting on tags produced from the regular monel metal material.

Our performance on this quotation is contingent as noted on page 1 and also on unusual shortages of materials and fuels.

For acceptance in 30 days after which this quotation will be subject to change without notice.

Yours truly,

NATIONAL BAND AND TAG COMPANY

  
J. R. Haas (cc)

JRH:lc/2

# Marine Turtle Newsletter

IUCN/SSC

Editor: N. Mrosovsky\*

No. 1. AUGUST 1976

Editorial Advisor: Archie Carr

## EDITORIAL

Efforts are going on all over the world to save marine turtles from extinction. Marine turtles are widely distributed and their migrations take them across international boundaries. These facts complicate both arriving at an understanding of their biology and devising the necessary measures for their conservation. Given this situation, the authorities at IUCN and the members of the IUCN Marine Turtle Specialist Group felt that better communication between workers in different parts of the world was needed.

The aim of this newsletter is:

- 1) to provide a forum for exchange of information about all aspects of marine turtle biology and conservation
- 2) to alert interested people to particular threats to marine turtles, as they arise.

The letter will appear at irregular intervals, depending on the amount of new information and any particular circumstances calling for action on the part of conservationists.

Recipients of this first newsletter can help by letting the editor know if he has their correct mailing address, and also who else should receive the newsletter. A yellow form has been provided for this at the end of the newsletter. In addition, any comments, suggestions or items for inclusion would be welcome. Please remember that people in other parts of the world may be interested to learn what you are doing and what the turtle situation is in your area. This letter is being sent to people in more than 30 different countries.

---

\*Address all correspondence to:

N. Mrosovsky  
Departments of Zoology and Psychology  
University of Toronto  
Toronto. M5S 1A1 Canada.

After consulting with various people and organizations, the Survival Service Commission of the IUCN issued the Principles and Recommendations on trade in sea turtles printed below. You are strongly encouraged to bring these principles to the attention of any organization involved in trade in sea turtle products, government departments, consumers, manufacturers, local press carrying advertisements for turtle products, etc.

(Editor)

From the IUCN Bulletin, April 1975, Vol 6, No 4.

SSC issues 'Principles' on trade in sea turtles

In response to the concern expressed in a decision of the 42nd meeting of the Survival Service Commission regarding the rapidly expanding trade in sea turtles and their products, the Secretariat of IUCN, in consultation with the Co-Chairmen of the SSC Marine Turtle Specialist Group, convened an ad hoc meeting to "review the commercial exploitation of marine turtles with special reference to the state and implications of turtle farming and, if possible, to reduce the result of such review to a statement of principles".

This meeting took place at Miami, Florida, USA, on 21 - 23 November 1974. The resulting Statement was accepted by the 44th meeting of the Survival Service Commission on 7 -8 March 1975, and is now issued as the Commission's 'Principles and Recommendations'.

PRINCIPLES AND RECOMMENDATIONS

1. Because the majority of the distinct populations of *Chelonia* (green turtles) are extinct, threatened or rapidly declining, the entire group should be considered endangered.
2. The reasons for the extinction and decline of populations include particularly exploitation for meat, hides, eggs and other products (including souvenirs), massive killing of turtles in the trawl nets of fishing fleets as well as increasing habitat destruction and disturbance.
3. The situation has become even more critical with the expansion of international commercial trade in sea turtles and their products.
4. As regards trawling, urgent attention should be given to encourage the use of nets designed to minimize undesirable catches of turtles, and research into this question should be given funding priority.
5. As regards souvenirs, the taking and preparing of turtles and turtle products for the primary purpose of souvenirs should be strongly discouraged.
6. As regards primary exploitation (meat, hides, eggs), where it can be demonstrated that local turtle populations can tolerate exploitation, and the desire or necessity is present, this should be done only by peoples traditionally dependent on them, with methods ensuring minimal waste and for local utilization. The diversion of wild sea turtle resources from traditional use by local people, or the expansion of that use, to satisfy or extend the demands of international commerce, is condemned.
7. It is emphasized at this point that there is a distinction between turtle farming and turtle ranching; a turtle farm implies that the unit is completely independent of wild stocks; a turtle ranch is a unit dependent on wild populations for eggs or turtles with the animals kept in varying degrees of captivity (H. Hirth, FAO Fisheries Synopsis No. 85, "Synopsis of Biological Data on the Green Turtle", December 1971).



8. Further, in recognition of the deteriorating energy and food resources of the world, it is advocated that wherever possible any turtle culture be maintained at the lowest applicable trophic level.\*

9. Farming objectives which lead to the expansion of existing markets resulting possibly in an increased exploitation of wild turtles are unacceptable. However, it would be consistent with the foregoing principles to accept turtle farming whose products will replace wild turtle products in existing traditional markets. The acceptability of any farm should be demonstrated by suitably designed and independently evaluated tests and data. 'Moreover, those ranching endeavours satisfying the above conditions and which can be shown not to harm wild turtle populations are also acceptable.

10. Funds should be provided for the preparation of informative pamphlets to promote the application of the foregoing principles and immediate measures should be taken to ensure the early implementation of such action as is necessary to conserve the marine turtle resource in accordance with these principles.

11. Nearly all the considerations stated for *Chelonia* may be applied with equal force to populations of the six other species of marine turtles.

\* All organisms are classified as producers, primary consumers (herbivores), secondary consumers (carnivores), or decomposers according to the place they occupy in the food chain of an ecosystem. This placement is termed 'trophic level'. Therefore, herbivorous species should subsist on a diet based on plant protein and carnivorous species on animal protein.

#### THE TAG LOSS PROBLEM

(based on information provided by G.H. Balazs, G.R. Hughes, J.P. Schulz, G.S. de Silva and Siow K.T.)

A persistent problem in assessing turtle populations is that tags often come off or are shed by the turtles. Mostly people do the best they can without ever addressing this important problem directly. In fact there are at least two practical questions here:

- 1) how to prevent tag loss, in particular what kind of tag is best?
- 2) how frequent is tag loss? This information is necessary for making population estimates based on tag returns.

On the first question, what type of tag is best, opinion seems to be divided. For instance, on a recent visit to Trengganu, Malaysia, Mr. Siow Kuan Tow (State Director for Fisheries, Kuala Trengganu, Malaysia) informed me that in the leatherback conservation programme plastic tags (Jumbo Rotatag, Dalton, Henley, England) had been substituted for monel tags because tag loss with the latter was too great. On the other hand, in S. Africa, plastic tags were given up sometime ago and monel metal substituted instead. More recently Dr. G.R. Hughes (P.O. Box 662, Pietermaritzburg, Natal, S. Africa) writes: "Regrettably a substantial number of loggerheads had lost their tags and the calluses appear to be those remaining after the loss of plastic tags although some calluses were clearly those resulting from the loss of monel tags. A not inconsiderable number of monel tags were removed and replaced with new ones because the originals were corroded, some very badly."

It is conceivable, of course, though not very likely, that one kind of tag would be better for one population and another kind for another. But without quantitative assessment of tag loss in these cases, it is not possible to tell whether this is the case, or whether either the monel metal or the plastic tag is superior.

There seem to be very few studies on tag loss. However, in Surinam. Schulz (1975, Zoologische Verhandelingen, 143, p 61-62) marked 80 newly tagged green turtles with paint. Within one month 12 of these had been seen on the beach again with the paint mark still visible, but without the tag (metal tag). "The actual number of animals that lost their tag has been estimated at 15-20%, a figure based on a calculation which included the estimated number of turtles that had lost both paint mark and tag." In whatever way one does the calculations, at a minimum certainly 15% of the tags were lost ... within a month! Schulz points out that there are several reasons why tags are lost, including poor tagging and loss through corrosion.

Corrosion of tags has been documented recently by Mr. G.H. Balazs (Institute of Marine Biology, P.O. Box 1346. Kaneohe, Hawaii, U.S.A.). He has a collection of tags recovered from sea turtles; their disintegrating and battered state is a dismal sight for any turtle researcher. Correspondence between Mr. Balazs and the manufacturers of the monel metal tag indicated that working of the metal to and fro might cause cracks which would result in deterioration of the metal. On the positive side, this company (National Band and Tag Company, 721 York Street, Newport, Kentucky, USA) is looking into the possibility of producing a tag made from a more corrosion resistant material. This is known as Iconel, an alloy containing nickel. The cost of tags made from Iconel is higher than that of monel metal tags. The exact cost however depends on how many of these tags are ordered. Combined orders will reduce the prices. People interested should communicate direct With George Balazs. He also has information and views on what size of tag is best. However, it must be added that Iconel has not yet been given long-term trials on marine turtles, and some method of assessing the reliability of this kind of tag would surely be desirable.

How might reliability of tags be assessed then? Mr. Stanley de Silva (Office of Chief Game Warden, Peti Surat 311, Sabah, Malaysia) is launching on an experiment that should help resolve some of these issues. He has undertaken to double tag green turtles nesting near Sandakan, Sabah; on one flipper there will be a monel metal tag and on the other flipper a plastic tag. If this experiment can be carried out with large enough numbers of turtles and for long enough, it should not only establish which kind of tag is superior, at least for the Sabah turtle populations, but also provide estimates of the chances of loss occurring with each of these two kinds of tag. Such estimates will be valuable in helping to assess trends in turtle populations based on tag returns. Perhaps someone should try something along similar lines with the new Iconel tag.

Meanwhile, anyone with information or views on the tag loss problem is urged to share them with other biologists by writing to this newsletter. N. Mrosovsky.

#### TOM HARRISSON : OBITUARY

Professor Tom Harrisson, Co-Chairman of the Marine Turtle Group, and his wife Christina, were killed in a road accident in Bangkok last January.

Tom was an incredibly versatile individual who has left his mark in many fields. His contributions to sea turtle conservation were enormous. Before the Japanese occupation the turtle egg industry of the Sarawak Islands (Talang 2 Besar, Talang 2 Kechil and Satang), off the southwest coast of Borneo, had been in the hands of a few prominent Malay families. In 1941 the industry was placed under a Turtle Trust Ordinance to be administered by the Curator of the Sarawak Museum. In 1947, Tom Harrisson became Curator of the Museum. He took charge of the Turtle Islands, instigated regulation of the exploitation there, and established a tagging program. His adoption of a monel metal cow-ear tag as a fin-clip, replacing the unsatisfactory shell-tags previously used, was a milestone in sea turtle research procedure. On July 4, 1956, a turtle that had been tagged at one of the rookery islands three years before returned to nest. This was the first remigration of a tagged turtle; and since then, hundreds of similar returns recorded at the Sarawak rookery and elsewhere have shown that the three-year absence

represented the predominant intormigratory interval of the species. Tom's frequent short published accounts of his conservation problems and achievements at the islands attracted worldwide attention, which surely lengthened the survival-expectancy of Chelonia. When he died, the Turtle Group lost an irreplaceable officer, the green turtle a staunch benefactor, and the surviving Co-Chairman-a valued friend. Archie Carr

#### NOTES ON TURTLE CONSERVATION IN NATAL

##### Hatchling Taggings:

1974/75 season was quite successful in that 11635 loggerhead hatchlings were marked and released of which only one has been recovered on the Cape Peninsula 1200 miles south of the release area. The hatchling had taken at least 2 months and at most 312 months to travel the distance. It is the 8th hatchling-recovered out of 33,000 marked over 4 seasons.

##### Adult Populations:

The loggerhead population was of average size this past season (1974/75) and there has been only a slight increasing trend over 12 years of protection. However, 49.7% of the nesting females encountered had nested in either one, two or three-seasons before this season.

The leatherback population during the 1974/75 season was the best ever. After an annual handling figure averaging 21 p.a. for 10 years the 1973/74 season saw the number go to 54 and 1974/75, 65 animals were handled. This was partly due to improved patrolling techniques but the-number of nests recorded (a more dependable record) -increased from 356 to 510, so this was indeed a promising increase.

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#### TURTLE PROGRAMME IN BAJA CALIFORNIA, MEXICO

The "Tortuga Prieta" (Green Turtle, Chelonia mydas carrinegra) is the commonest turtle found on the S.W. coast of the peninsula and within the Gulf of California. This species is highly prized for its meat and the skin and flippers are included in stews made from it. The skin is not of very high quality and does not make good leather; it is therefore used almost entirely for food. The entire Peninsula has been surveyed but no nesting grounds have been found for this species. It is noteworthy that most of these dark coloured turtles caught within the Gulf of California are immature, small in size (60%) and that neither the adult males or adult females are in a reproductive state.

The 'Tortuga Golfina' (Pacific or olive ridley, Lepidochelys olivacea) begins to become abundant in the S.W. part of the peninsula and within the gulf itself. There are nesting grounds on the South of Magdalena Bay and around the cape.

In addition to the work mentioned above, the abundance of turtles within the gulf has been determined, and a complete study made of the fishing industry and allowable catches specified.

Turtles are caught all-along both coasts; nets with 90 cm mesh are used, or turtles are harpooned from boats (1 ton capacity) with outboard motors.

Translated from an account by: Biol. René Márquez M.  
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Loggerhead Turtle Newsletter

A newsletter about loggerhead turtles in the United States has been started. The first loggerhead newsletter describes projects in various parts of the United States, and plans to develop a centralized data bank, computer programmes, and distribution of uniform data sheets.

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P.O. Box 1346,  
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Hawaii, USA 96744.

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