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WORKING PAPER

DANGEROUS GOODS PANEL (DGP)

TWENTY-THIRD MEETING

Montréal, 11 to 21 October 2011

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel:
5.3: Review of provisions for information to the pilot-in-command

REVIEW OF THE REQUIREMENTS FOR THE PROVISION OF INFORMATION TO THE PILOT IN COMMAND

(Presented by G. A. Leach)

SUMMARY

This working paper details the results of research carried out in the United Kingdom in respect of the current requirements of Part 7;4.1 (NOTOC) of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) and is offered for consideration by the NOTOC Working Group.

Action by DGP: The DGP is invited to consider the information provided in this working paper, in conjunction with any similar data provided by other States, with a view to determining whether any changes to the provisions of Part 7;4.1 of the Technical Instructions are appropriate.

1. INTRODUCTION

1.1 During the 2010-2011 biennium the Dangerous Goods Panel undertook to review the provisions of Part 7;4.1 of the Technical Instructions, the provision of information to the pilot-in-command. These provisions have been largely unaltered since the first edition of the Technical Instructions. There are some who believe that the current provisions are adequate and need not be amended. Others, however, believe that with advancements in technology the provision of information would be assisted by a simplification of what is currently required with possibly the addition of some elements which are not mandated at present. It is important to re-iterate that the Panel were tasked with reviewing the current requirements not reducing the requirements although such action may be deemed appropriate once all available information has been taken into account.

1.2 At DGP-WG/10 in Abu Dhabi DGP-WG/10-WP/28 advised participants of the work which was being done in the United Kingdom to contribute to the review. This included a questionnaire which was circulated around UK industry. 136 completed forms were received; 77 from a passenger operator, 52 from 2 cargo airlines and 9 from helicopter pilots. Analysis of the results is attached as Appendix A to this working paper. Attached at Appendix B is a list of all freehand comments received with completed forms. Other panel members were encouraged to carry out a similar exercise, with the UK questionnaire as a suggested basis and whilst results from other States are awaited, The Conference on the Safe Transport of Hazardous Articles (COSTHA) independently circulated the UK form to a number of major US airlines. COSTHA received 525 completed questionnaires; 172 from cargo operators, 493 from passenger operators with 1 unknown. Analysis of the results is at Appendix C. Freehand comments were not retained. Analysis from the UK and US is combined at Appendix D.

2. RESULTS OF THE QUESTIONNAIRRE

2.1 The NOTOC working group is invited to consider the results of the completed questionnaires in conjunction with information gleaned from other States. To prompt discussion it is worth noting that Part 7;4.1.1.1 specifies requirements, whether it be the air waybill number, which has no value as far as safety is concerned, or the UN number, which even the most sceptical would agree is a critical element. Consequently the omission of any element may result in enforcement action and it is queried whether this would be appropriate.

2.2 Of the required elements it is suggested that the following are justified in their mandatory status:

- Proper shipping name;
- UN number;
- Packing Group;
- Class or division;
- Number of packages;
- Exact loading position;
- Net quantity;
- Radioactive material category or Transport Index (i.e. one or other but not both).

2.3 It is suggested that the following items are worthy of debate in respect of their mandatory status:

- Air waybill number – of no safety value but is the link between the Dangerous Goods Transport Document and the package;
- Technical name – of no immediate safety value to the crew but may become important to the emergency services after initial response;
- Radioactive material category or Transport Index (i.e. one or other but not both)
- Whether the dangerous goods must be carried on a cargo aircraft
- Aerodrome of unloading

- An indication, if applicable, that the dangerous goods are being carried under a State exemption

2.4 Of particular interest are the free hand comments received from the UK questionnaires where there are a number of views expressed to suggest that the existing NOTOC requirements are overly complicated. It is suggested there a number of reasons for this belief, including:

- an individual line entry has to be made for each consignment (because of the requirement for the air waybill number) even if the dangerous goods are of the same type and quantity;

- individual line entries have to made for each different quantity of the same dangerous goods from the same shipper;

- the requirement for the technical name to supplement some n.o.s. entries.

3. OPTIONS

3.1 Option 2 of the original questionnaire attempted to address the three issues raised in paragraph 2 above and from the questionnaires received appears to be the favourite of the majority of respondents. However, based on comments made, this option has been refined further to include the drill code (which is not currently a requirement), the aerodrome of unloading, an indication that carriage must be in a cargo aircraft and a further indication that carriage is under a state exemption. (See appendix E to this WP).

3.2 The technical name has been the subject of debate over many years with many suggesting it is of limited value to a flight crew. Technical names can be extremely long and complex and as suggested by some of the UK respondents are of value only to those with a degree in chemistry. An example is a proper shipping name which, if the relevant change in the 17th Revised Edition of the Model Regulations is adopted in the Technical Instructions would potentially result in the following appearing on a NOTOC:

3.3 “Organic peroxide type D, solid ([3r- (3r,5as,6s,8as,9r,10r,12s,12ar**)]-Decahydro-10-methoxy-3,6,9-trimethyl-3,12-epoxy-12h-pyrano[4,3- j]-1,2-benzodioxepin)”

3.4 The square brackets and the asterisks actually form part of the technical name and quite apart from the relevance to the flight crew the ability of computerised NOTOCs to handle such characters is not known.

3.5 It is perhaps surprising that the Technical Instructions requires a number of elements that are of limited safety value to the flight crew but does not require something which is of undoubted assistance, namely the drill code. One course of action could be to remove the requirement for the technical name to be stated and introduce a requirement for the drill code. However, if that was to be done, thought would need to be given as to how details of the technical names could be provided to the emergency services. One possibility could be for operators not to quote the technical name on NOTOCs providing they had procedures in place to ensure that copies of Dangerous Goods Transport Documents could be provided to the emergency services dealing with an incident within a reasonable period.

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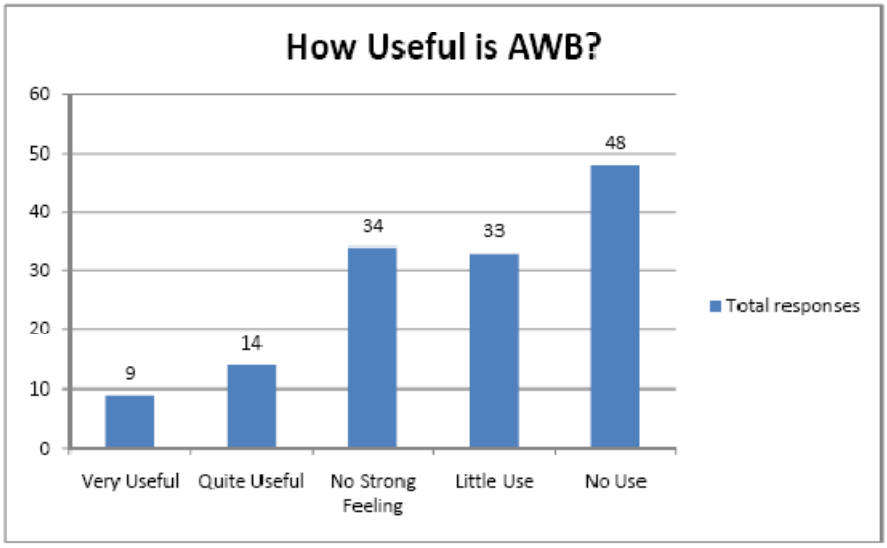
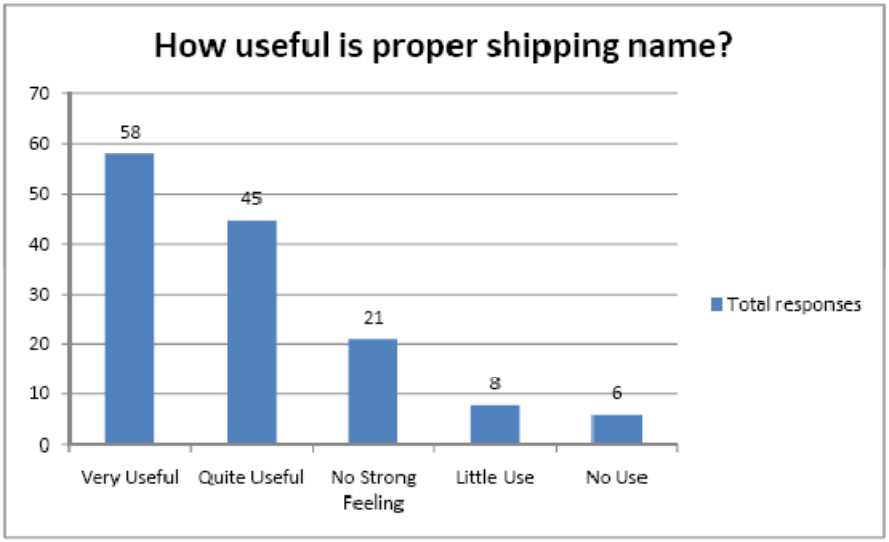
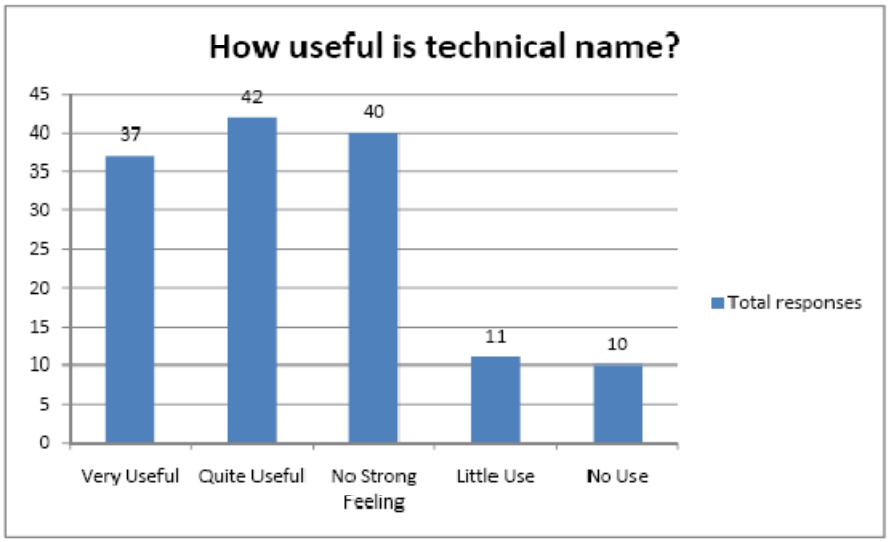
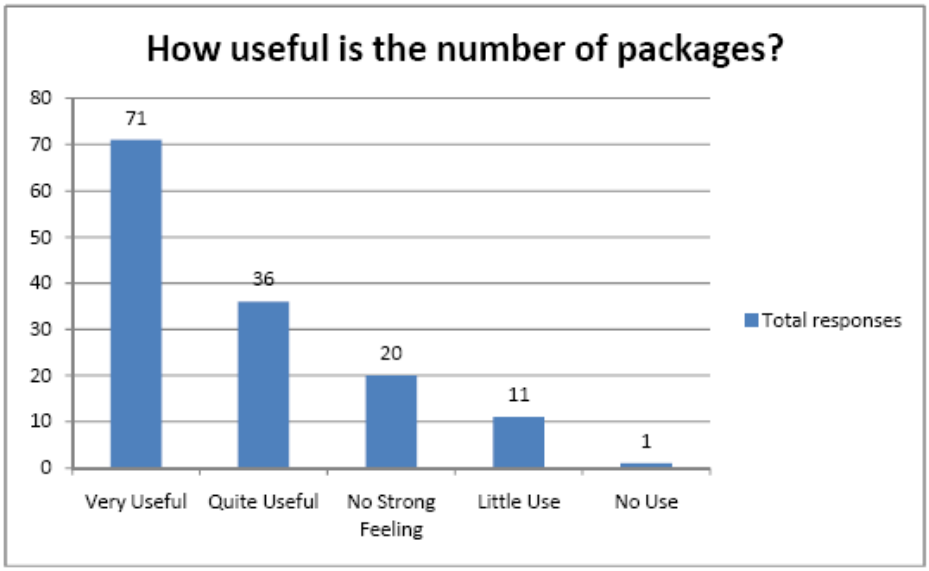
APPENDIX A

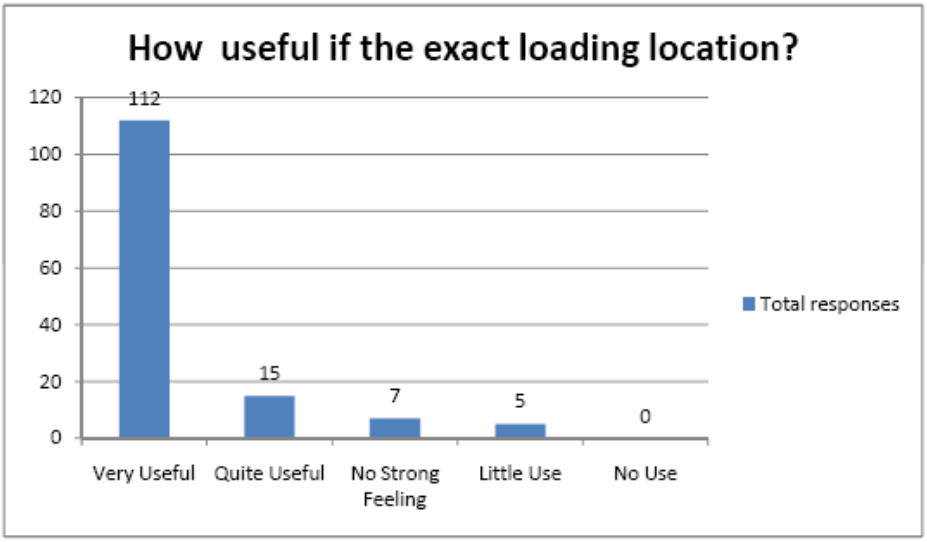
Results of UK Questionnaires

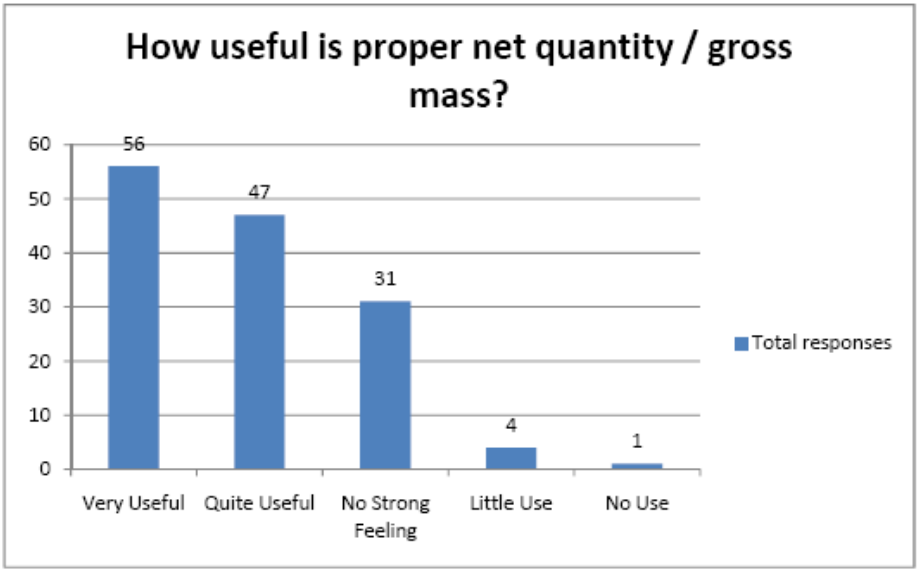


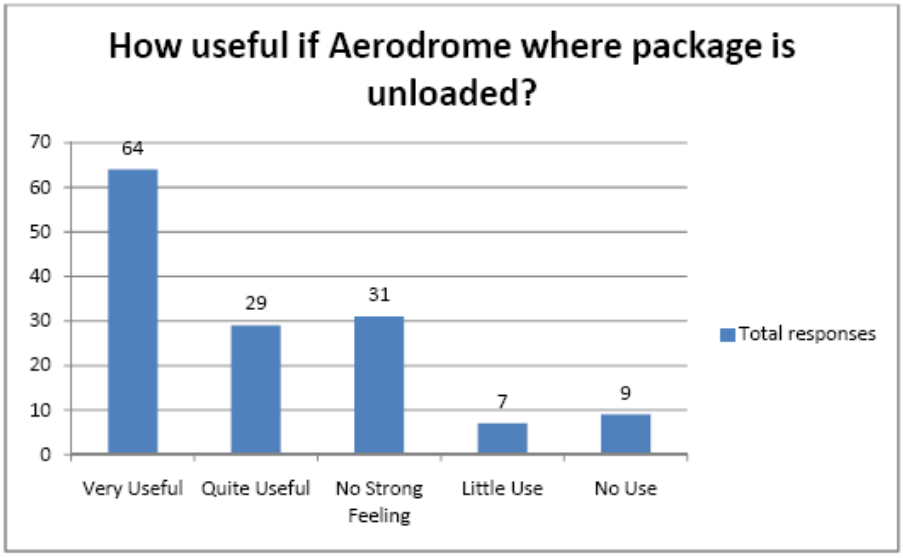


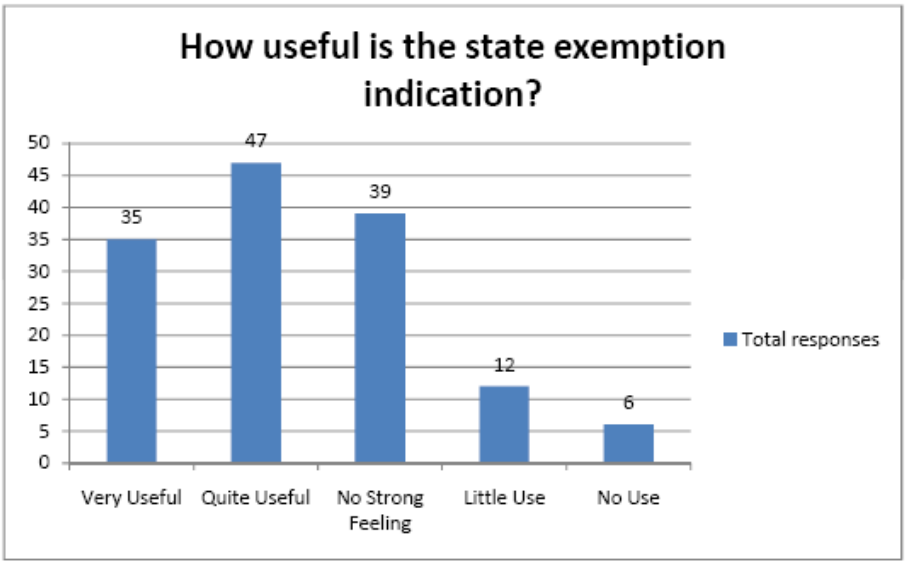


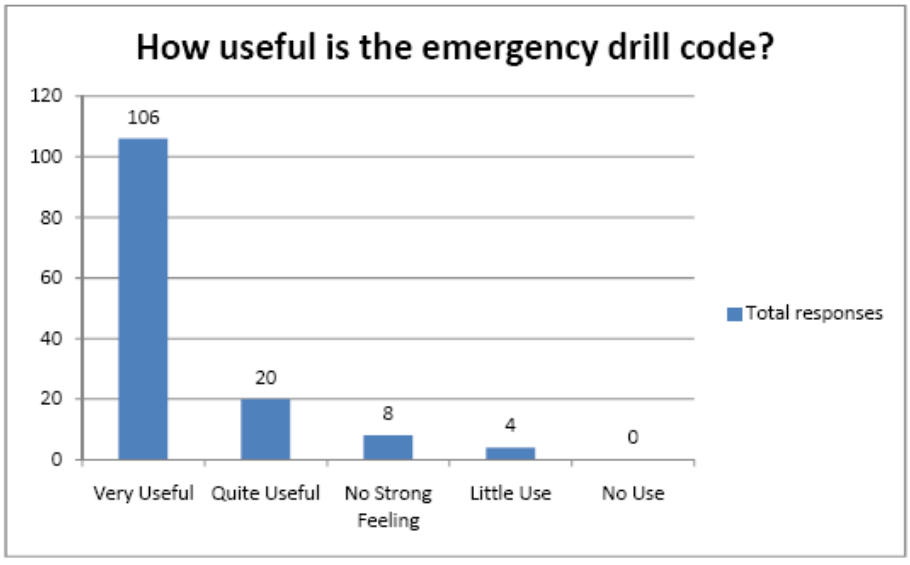

How useful is the number of packages?
80
70
60
50
40
30
20
10
0
71
36
20
11
1
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

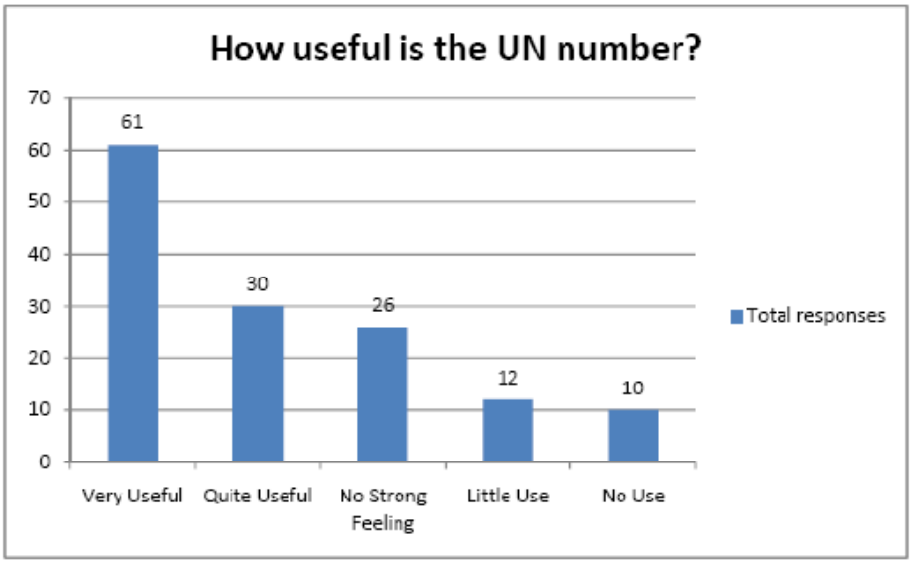

How useful if the exact loading location?
120
100
80
60
40
20
0
112
15
7
5
0
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

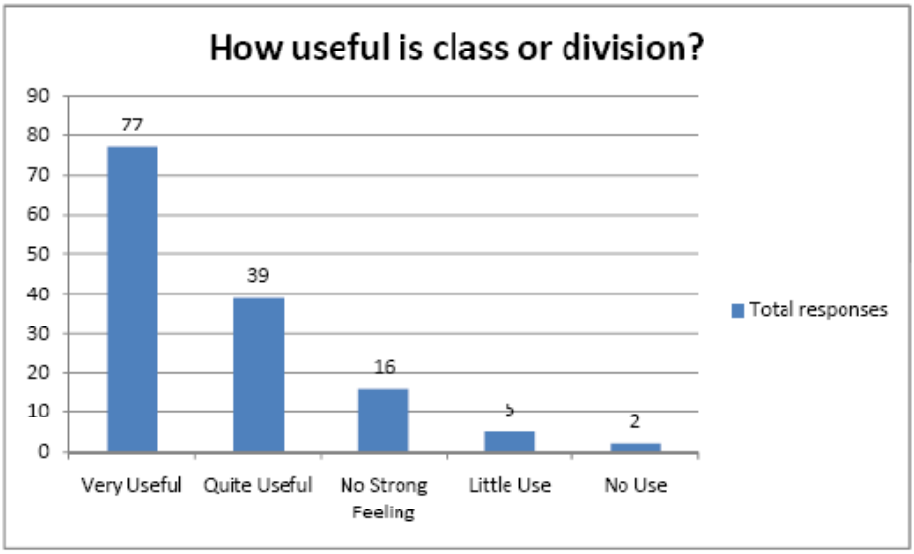

How useful is proper net quantity / gross mass?
60
50
40
30
20
10
0
56
47
31
4
1
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

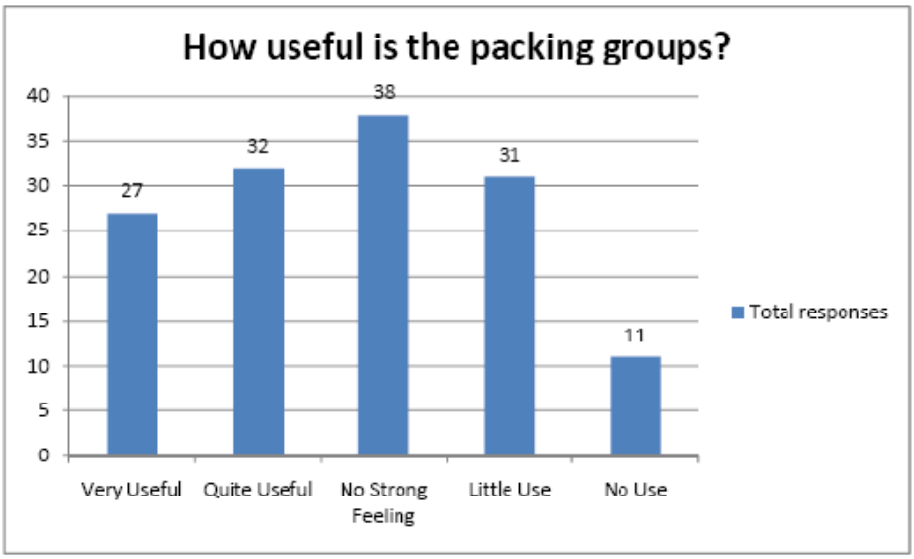

How useful if Aerodrome where package is unloaded?
70
60
50
40
30
20
10
0
64
29
31
7
9
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

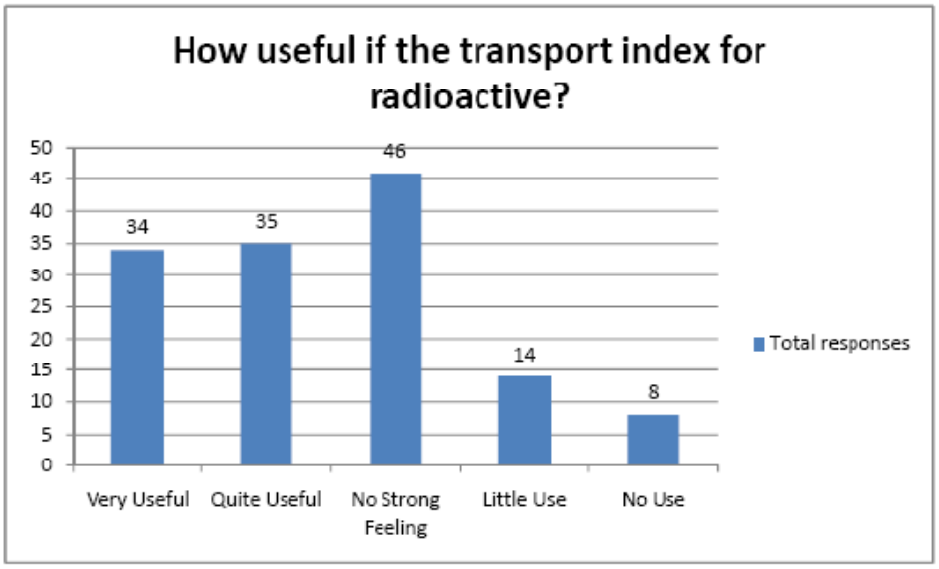

How useful is the state exemption indication?
50
45
40
35
30
25
20
15
10
5
0
35
47
39
12
6
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

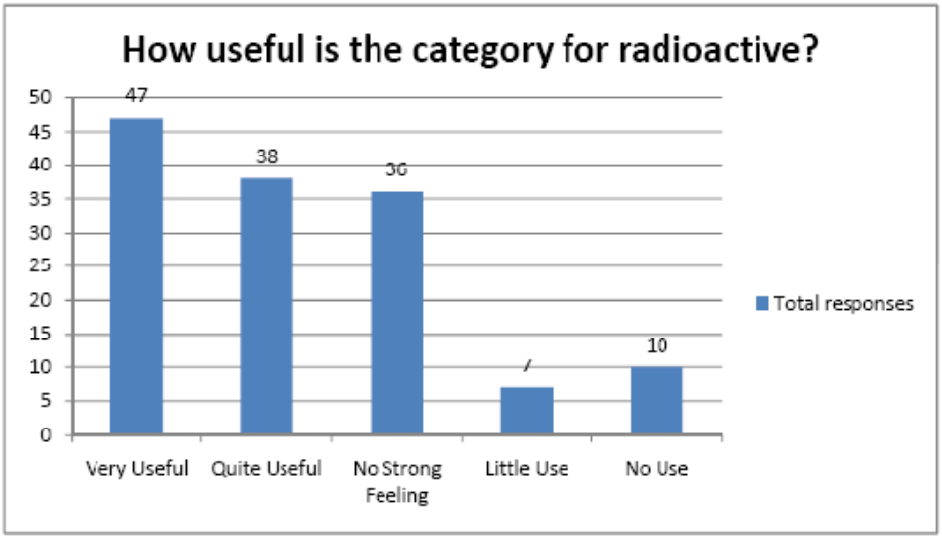

How useful is the emergency drill code?
120
100
80
60
40
20
0
106
20
8
4
0
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

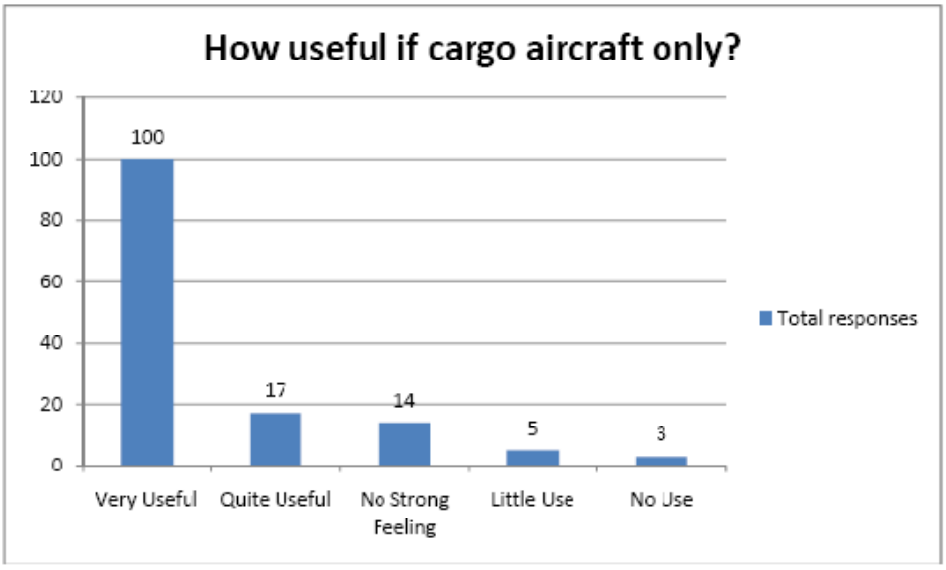

How useful is the UN number?
70
60
50
40
30
20
10
0
61
30
26
12
10
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

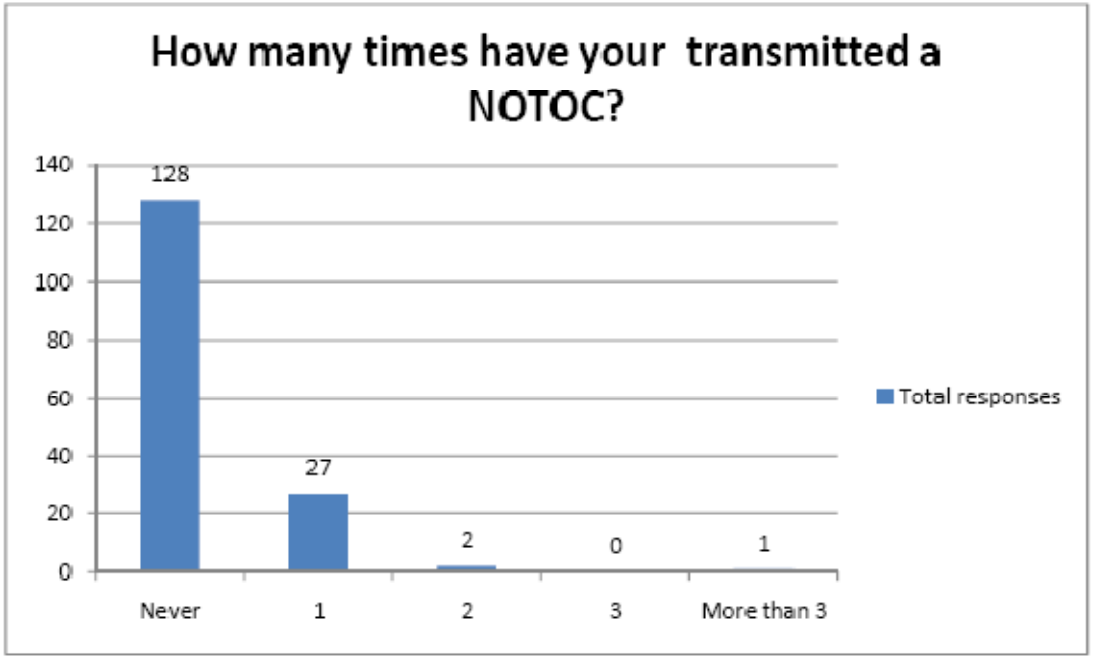

How useful is class or division?
90
80
70
60
50
40
30
20
10
0
77
39
16
5
2
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

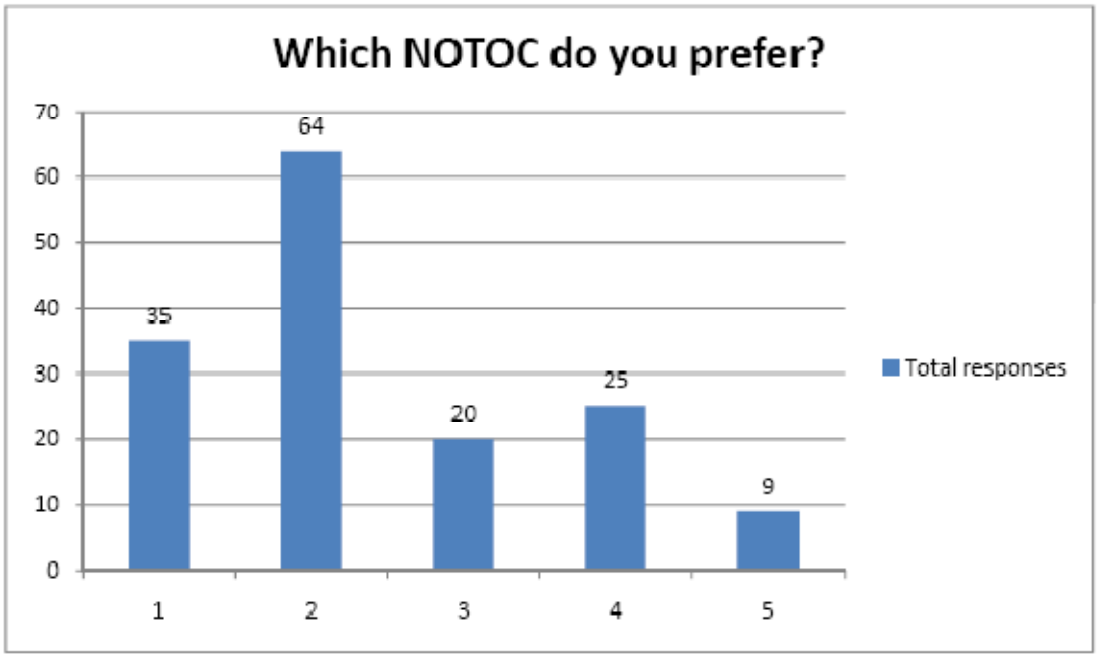

How useful is the packing groups?
40
35
30
25
20
15
10
5
0
27
32
38
31
11
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful if the transport index for radioactive?
50
45
40
35
30
25
20
15
10
5
0
34
35
46
14
8
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful is the category for radioactive?
50
45
40
35
30
25
20
15
10
5
0
47
38
36
7
10
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful if cargo aircraft only?
120
100
80
60
40
20
0
100
17
14
5
3
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How many times have your transmitted a NOTOC?
140
120
100
80
60
40
20
0
128
27
2
0
1
Never
1
2
3
More than 3
Total responses


Which NOTOC do you prefer?
70
60
50
40
30
20
10
0
35
64
20
25
9
1
2
3
4
5
Total responses

— — — — — — — —

APPENDIX B

"Other comments":

1.	**Comments in support of simplicity:**
1.1	"As simple as possible in layout and content is the watch word"
1.2	"No (comments), however, NOTOC – Important doc must reflect an easy way to see what has been loaded and where. Emergency response phone numbers always helpful"
1.3	"Dangerous goods are an item you rarely see, never smell or touch. It is definitely "out of sight, out of mind" item. I would never know whether the packing group is correct for product. Hence information needs to be simple. My only involvement would be to pass details to ATC in the event of an emergency. To try to pronounce some of these product names is beyond me especially when in a stressful situation. This I believe would lead to confusing by ATC trying to write it all down and then pass it to fire crews. Far better to pass UN number e.g. UN1718 to ATC. Simple, short and straight forward. But do fire crews carry the dangerous booklet we have?? If they do, then obviously related UN number to product number and then to Emergency Code Drill as how best to deal with product."
1.4	"The whole NOTOC system is far too complicated. I have very little time to check everything is correct. I assume that somebody else with more time has done this for me. What I need to know is: 1) What I am carrying 2) How much of it and where is it loaded 3) Is it dangerous if split or damaged 4) What do I need to do if damaged on arrival"
1.5	"Codes and classes just cloud the information. Plain English where little or no interpretation required. Keep it simple."
1.6	"I think that in an emergency situation you would need a very easy to use/read NOTAC to give the basic information quickly to the relevant services. I need to know, what is on, where it is, how dangerous it may be. Other info is 'nice to know'"
1.7	"Current format very difficult to obtain information quickly."
1.8	"The main purpose of a NOTOC, in my view, should be to inform the Commander of the likely indications of an in-flight spill/escape, and give thorough guidance as to the dangers and necessary response to both primary and subsidiary risks. The inclusion of an ERG code, plus expanded "checklist" should always accompany a NOTOC."
1.9	"Please keep it simple and straight forward. Flight crew are often limited in time available on turnaround. Loading them up with information requiring reference to Dangerous Goods and/or operations manuals should, if possible be avoided."

1.10	"The simpler the better a)If so then an easy to read description of its location in case of an emergency i.e. Option 5 with a Class or Division since all our Quick Reference Guides need that information to interpret what the substance is (Option 5 could be the other way round since our load sheets run from left to right and confusion could arise). b)If not then more detail is good but more time to read. It is necessary not 2 mins before departure which is when they arrive."
1.11	"As we are an all cargo airline it is important to know how many packages of "cargo aircraft only" dangerous goods are on board and exactly where they are in case of emergency. The drill code is important in case of having an incident we can quickly inform the emergency services of requirements such as "no water" to be used. I can see how this would be of less use as a passenger aircraft carrying cargo as it is all in the lower holds, but we still require this information on the NOTOC if it is to be standard airline issue. The air waybill / packaging group / and total quantities (litres / kgs) are of less use to us than number of packages and where they are."
1.12	"I believe that a form showing 'Technical Name, quantity and also having it classed under the class or division would be best. This would avoid us to give the visual inspection more accurately. Just having a quantity listed does not indicate what packing I am looking for. Whereas something saying 'Paint 200L would indicate a liquid. As crew, we are required to check location and condition of the packages. Any information required by a ground station would be best obtained by phone, fax or even email. Crews would have enough to do without passing NOTOC information over the radio. Please see Option 4 for additional info."
1.13	"Flight crew have very limited time for pre-flight D.G. Analysis. All info provided to flight crew should have the emphasis on providing the salient information required in the event of a dangerous goods incident."
1.14	"I agreed with the sentiment that currently the NOTOC contains too much information, much of which, as pilots, we simple do not understand. Providing me with the shipping name of some chemical is meaningless unless you have a degree in chemistry. What I want to know is just what danger does it present (i.e. the class or division) and has it been loaded correctly (i.e. in the correct quantity and position). Knowing what packing group it requires is of no interest to me since I cannot see the bulk of our cargo and have no way of verify the it too is correct. Rather like maintenance, some things relating to D.G.s have to be taken on trust."
1.15	"Please train pilots to primarily respond to the emergency response checklist. They do not need to know the packing method/quantities etc. The system must be simplified in order that the IMPORTANT information is easily obtained/used. I do not believe that ATC should ever ask for details over the R/T during an emergency but the crew should just present the NOTOC to the fire services on arrival."
1.16	"Being a document for crew and rescue personnel, future design formats should reflect the necessity and omit unnecessary information. We need to know how much of what is loaded where, what to do in case we have to spend the next 25 min with something unpleasant whilst attempting to land and whether positioning meets compatibility requirements. Alert crews basically need the same information."

1.17	"1)Present system too complex 2)Purpose of NOTOC to crew is a)to be able to inform airport what is on board is case of emergency b)to be able to inform an airport of the consequences of a spillage/breakage and to be informed oneself. 3)Despite years of annual training most people find it difficult to remember codes and their meanings. Nature of goods and consequences of breakage should be as closely as possible in plain language on NOTOC. Signature block/statement is unrealistic. Difficult if not impossible for pilots to check where/how/quantity/damage etc."
1.18	"The crucial purpose of the NOTOC is to advise what it is, where it is and how to deal with it quickly and safely. Too much information for the pilot can cause confusion if there is a dangerous goods incident. Large amounts of information required by ATC also detracts from the primary purpose of flying the aeroplane. Some proper shipping names are meaningless to most pilots without chemistry degrees and indeed quantities can be meaningless if the volatility or passivity is not known or understood. A grading system or annotation of the most dangerous items on the NOTOC would be helpful. A hold distribution table similar to that in Option 5 would be useful where cargo some detection is hold specific."
1.19	"Approximate location (forward or rear hold, for example) quantity and class/division is all one requires."
1.20	"Main criteria from the pilots perspective is: What it is Where it is What is the risk Where it is going How much is there Is it compatible with adjacent cargo."
1.21	"Presently there is too much insignificant (to aircrew)detail detracting from what is really important. That is to say it is important to known what an item is and where it is loaded, how much it weighs and an easy recognition of compatibility with other items."
1.22	"Just need to know what you're got and where it is and what to do if it leaks!"
1.23	"Proper shipping name, quantity and location on the aircraft are the pertinent bits of information the captain needs."
1.24	"Current system is far too complicated. Needs to be kept simple!"

1.25	"Dry ice is a common reason for a NOTOC but sometimes the cargo is described as 'flowers' and the reason for NOTOC is the dry ice. Small amounts of dry ice should not be a hazard and not NOTOC. The NOTOC also has a lot of data that is not useful. All we need is 1) what it is 2) where it is and 3) response codes. NOTOC option 4 but with response codes is best in my opinion."
1.26	"Current NOTOC format is not very user friendly at all."
1.27	"All I really want is the info highlighted to pass to ATC in one place."

2.	**Comments in support of maintaining current requirements:**
2.1	Prior to me completing the questionnaire I may have considered the present NOTOC too cluttered, and therefore I may have thought Option 2 preferable. However, after completing the elemental table I have realised that to varying degrees most of the information contained within the present format can be useful, particularly when required by ATC, Fire service etc in an abnormal/emergency situation (required twice in my 22 years with BMI). In conclusion I therefore prefer Option 1.

3.	**General comments:**
3.1	"Packing groups and radioactive Cat should be shown in plain language as they are 'Opposite' o/e/ Cat I II and III. Classification/divisions as plan language (as in example 4) Total quantities per compartment."
3.2	"A useful addition would be to have company/aircraft type upper limits printed on form."
3.3	"1,At the moment IATA Dangerous Goods Regulations require the NOTOC is provided to captain as soon as 'practicable'. This is a bit vague and in practice means that the NOTOC arrived 5 minutes before departure. A requirement for the captain to receive NOTOC before loading would be safer as at the moment it is possible for an incident to occur while boarding passengers and for the flight crew to be unaware that dangerous goods have been loaded. 2.Option 4 is good but actual hold position would be useful in order to confirm items are correctly separated within the forward or rear hold. 3.Printing the emergency response guidance on the NOTOC would be safer than wasting time searching for the red pages of the ICAO DOC 9481 AN/928 emergency response guidance for aircraft incidents involving dangerous goods."
3.4	"Obviously most useful/needed most for passing to relevant authorities the information they need to know in an emergency. "
3.5	"As far as I understand, the primary purpose of the NOTOC is to pass pertinent information to the emergency services in case of an incident. Therefore the information they require is what should be most evident. It is obviously useful to have the description in plain English as well."

3.6	"Great effort should be made to get information to captain (verbal notification would suffice) as early as possible and not at 5th minute when everything tends to be rushed)"
3.7	One of my main concerns has always been the carriage of lithium batteries whether already fitted to consumer goods or not. I have always felt that we were not supplied with enough information about these and the fact that sometimes they needed to be in position A and sometimes not. Events in the past caused this concern and the recent UPS 747 incident has only served to exacerbate this.
3.8	Option 5 is almost entirely useless – this would delay flights as every UN number would have to be checked.

4.	**Comments in support of option 1:**
4.1	Option 1 is my choice. Could loading position also include front, rear and bulk holds. i.e. maybe something like Loading position LIR : Front 32 : AFT
4.2	Option 1 provides all info that could be needed in the event of a problem without having to refer to any other publication for clarification. Furthermore, it would be easy to ensure incompatible items were not loaded together.

5.	**Comments in support of option 2:**
5.1	1)Very important for NOTOC to be easily understood because i) it arrives on flight deck normally only minutes before departure – a time of quite high workload. ii) if an in flight DG event occurs would need info from NOTOC at a time of high workload and stress. Preference Option 2 – class or division – instead of number prefer name of class/division. Add column with Drill Code!!!

5.2	2)Of Specimen NOTOC's attached, No 2 (Option 2) is the clearest and easiest to digest. If it were possible to keep the same structure/layout and add to it columns for i) written descriptor of class/division e.g. 2.1. flammable gas ii) the drill code then Option 2 looks the best one.
5.3	Option 2 seems the best. A NOTOC in plain English as far as possible is good, which option 2 is close to. I find that too much info on a NOTOC simply goes over my head as often the NOTOC is presented along with the load sheet when the doors are closing and time is limited. A simple, easy to read and digest document is required. I know my comments above may be a contradiction to my answer but perhaps less is more.
5.4	Prefer form 2 but with ER Drill Code added.
5.5	Prefer NOTOC 2 for clarity; actual packing group would be more precise info than maximum. Is packing group necessary? It doesn't have any operational significance to pilots (packing group).

6.	**Comments in support of option 3:**
6.1	Option 3 is a simple and clear presentation for aircrew awareness but lacks specific information that other agencies may require. For me personally, I prefer this option.

7.	**Comments in support of option 4:**
7.1	Prefer option 4 but would like to see the exact location of the dangerous goods as well.

8.	**Comments in support of option 5:**
8.1	Prefer Option 5 but with addition of proper shipping name and station of unloading.
8.2	The 5th example is good for situational awareness as it semi-replicates the loading instruction, if there was a little more detail in the way of technical info (name, class etc) it would be very useful. One drawback with No 5 is that it may not be so easy to print out at more remote outstations.
8.3	I would prefer a simple form with just the basic information clearly displayed, indicating the exact position of loading. Option 5 would be my choice since Options 3, 4 do not display the **BULK** hold.
8.4	I prefer Option 5 due to its pictorial representation of the aircraft hold positions. It is important however that this approach reflects the orientation of the manual load sheet and or loading instructions. i.e. the front of the A/C is either left or right but to a common STD enhancing S/A. I would add that Option 5 would benefit the crew if it included the proper shipping name and IMP code to cross check compatibility, otherwise if questioned without the information readily available, punctuality would be affected whilst ensuring safe operation.

8.4	NOTOC 5 is the best layout but needs to provide more info for the Red Book. Pilots are only interested in the Red Book and what to do when things go wrong. Other than that it just another piece of paper to sign.
8.5	Option 5 is good as it depicts exact location in holds, however, a combination of this with option 1 and 5 would be ideal.

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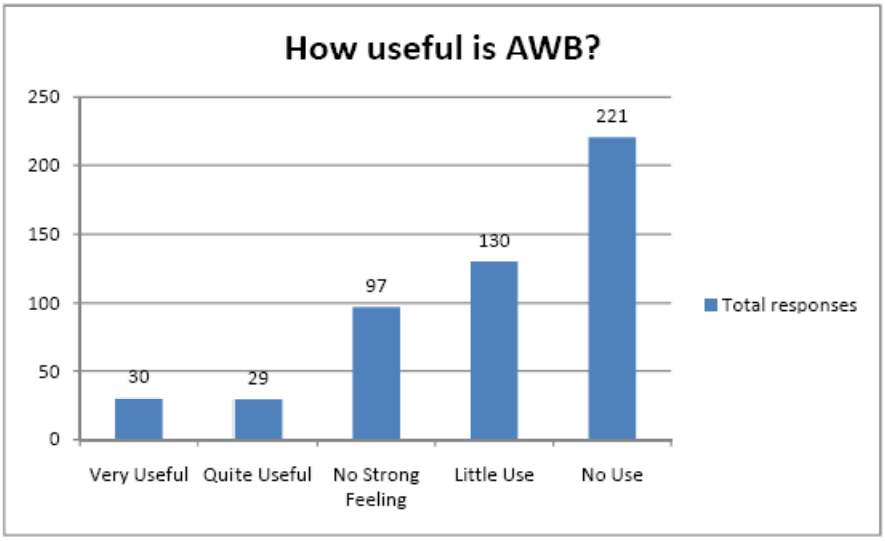
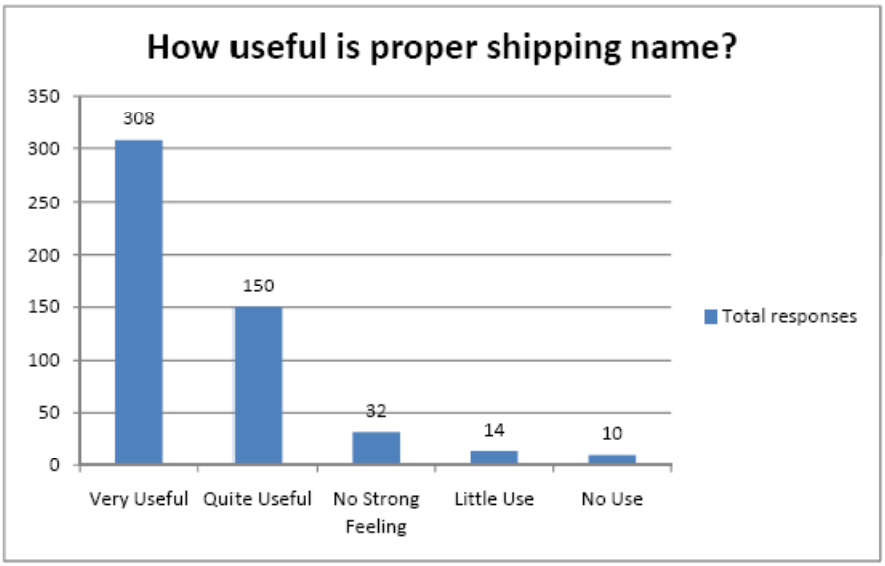
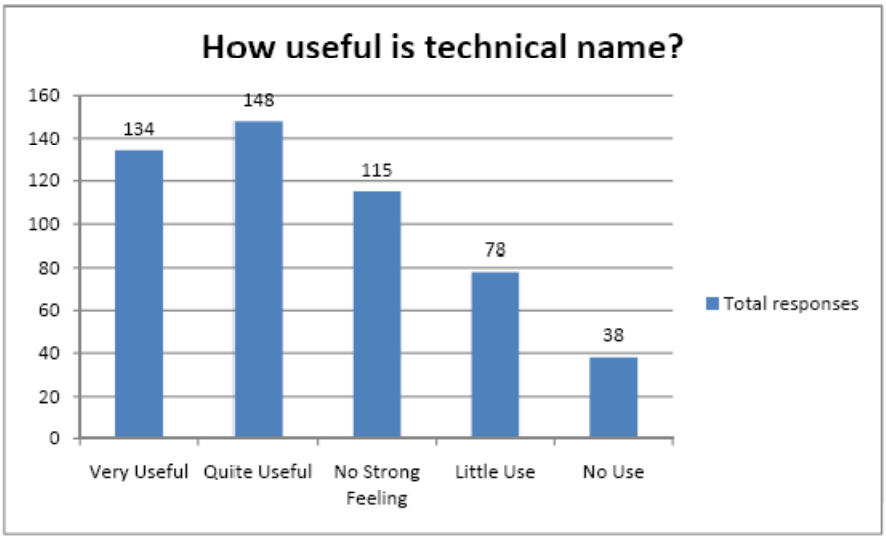
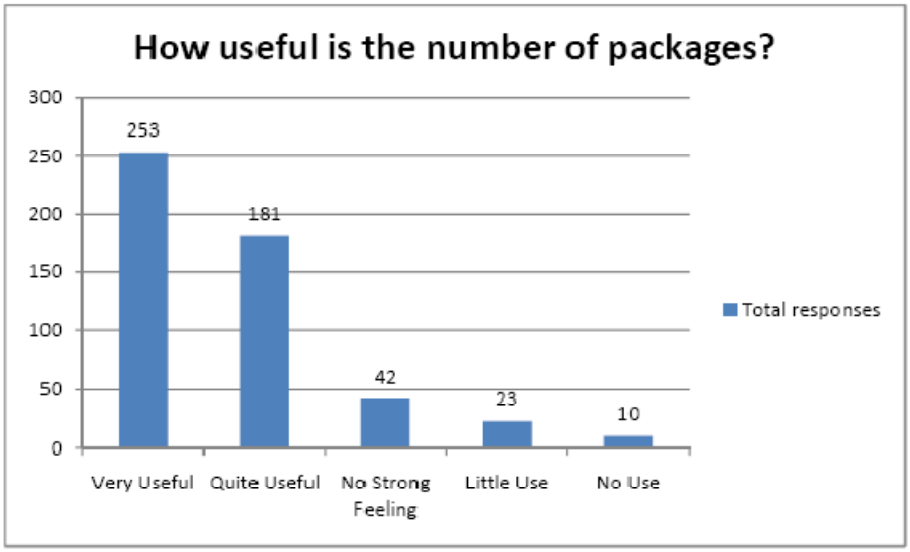
APPENDIX C

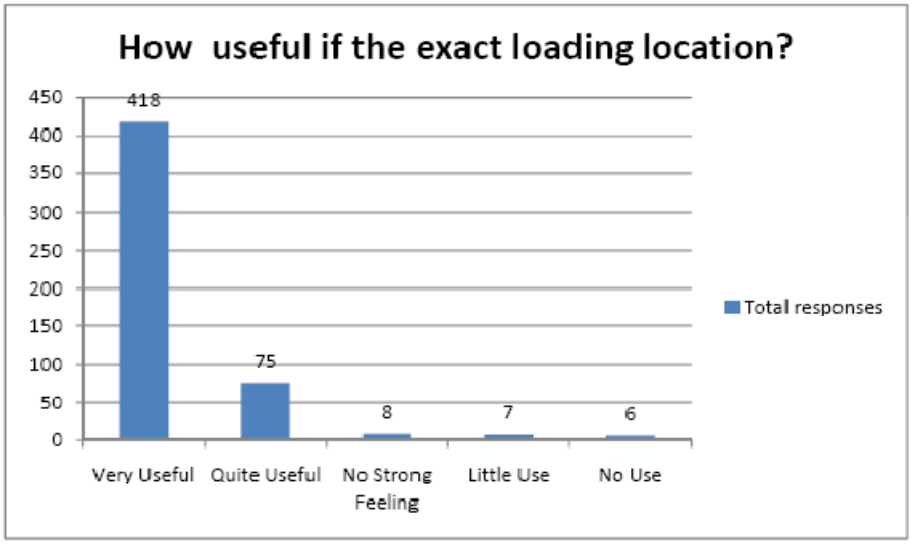
Results of USA Questionnaires

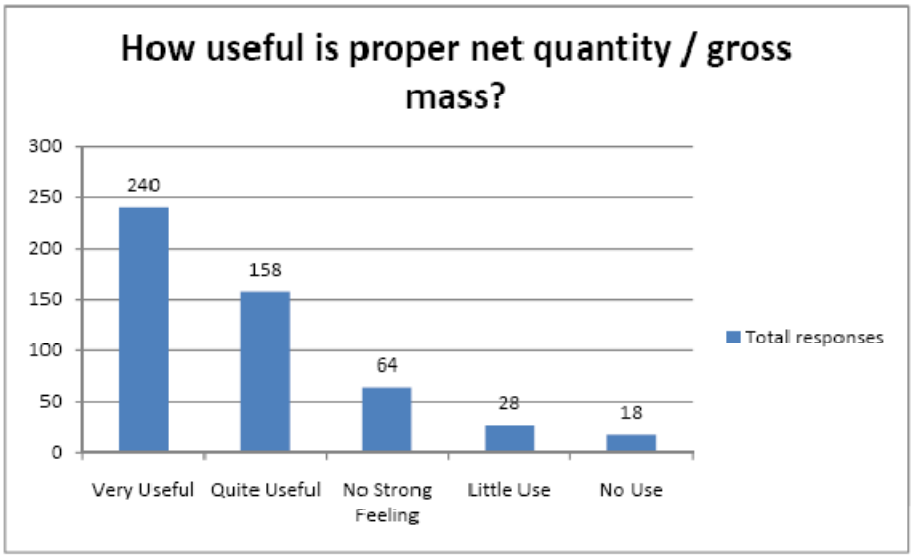


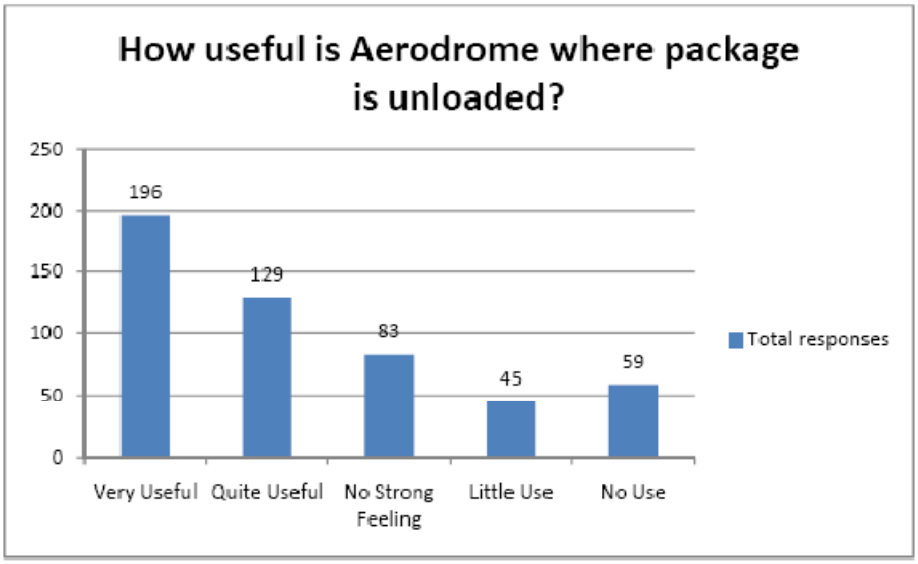


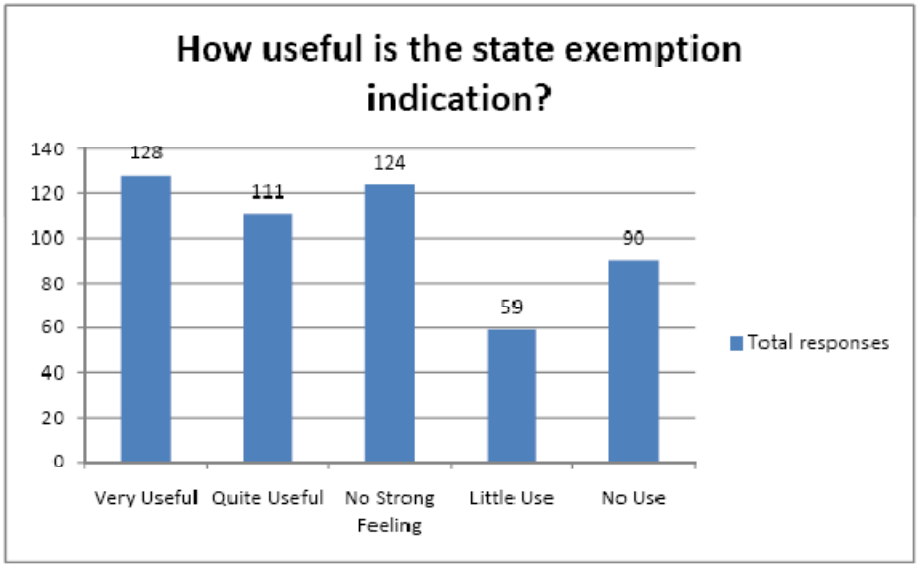


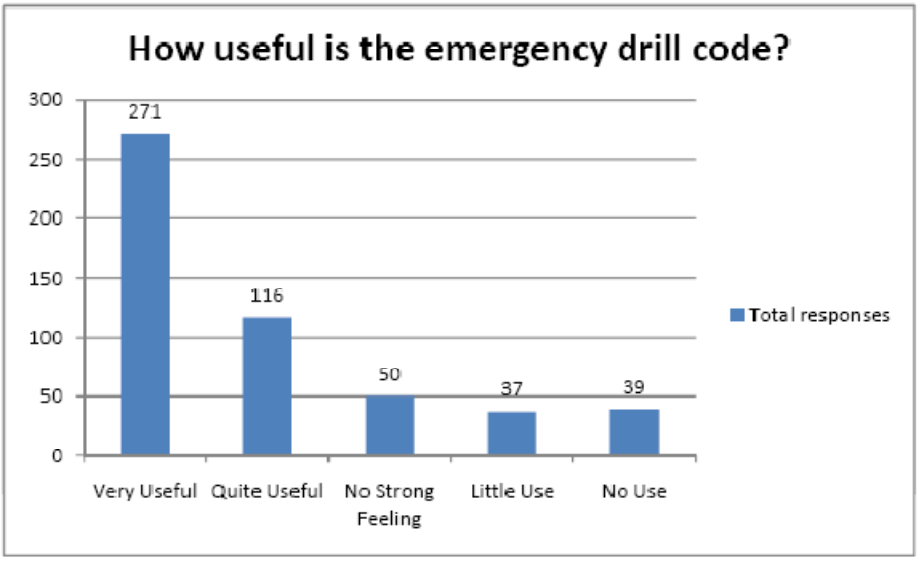

How useful is the number of packages?
300
250
200
150
100
50
0
253
181
42
23
10
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

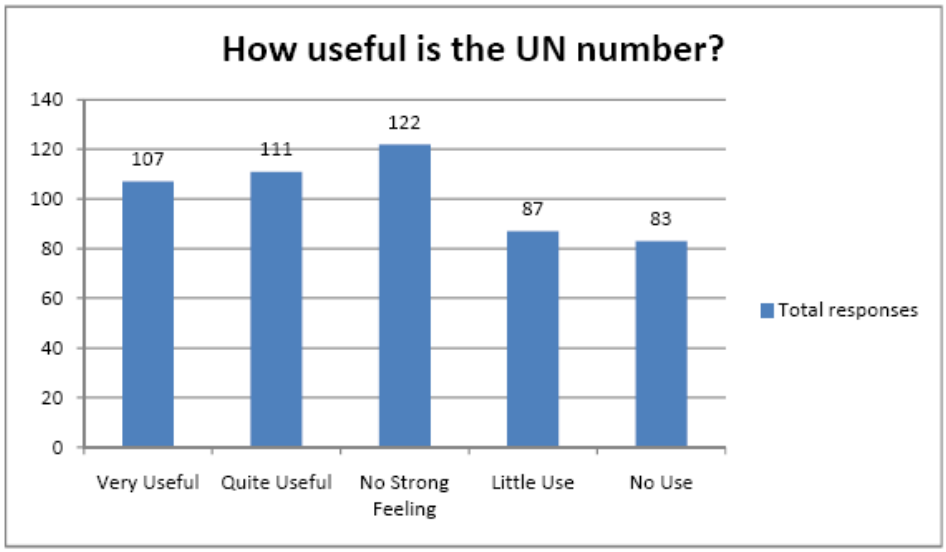

How useful if the exact loading location?
450
400
350
300
250
200
150
100
50
0
418
75
8
7
6
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

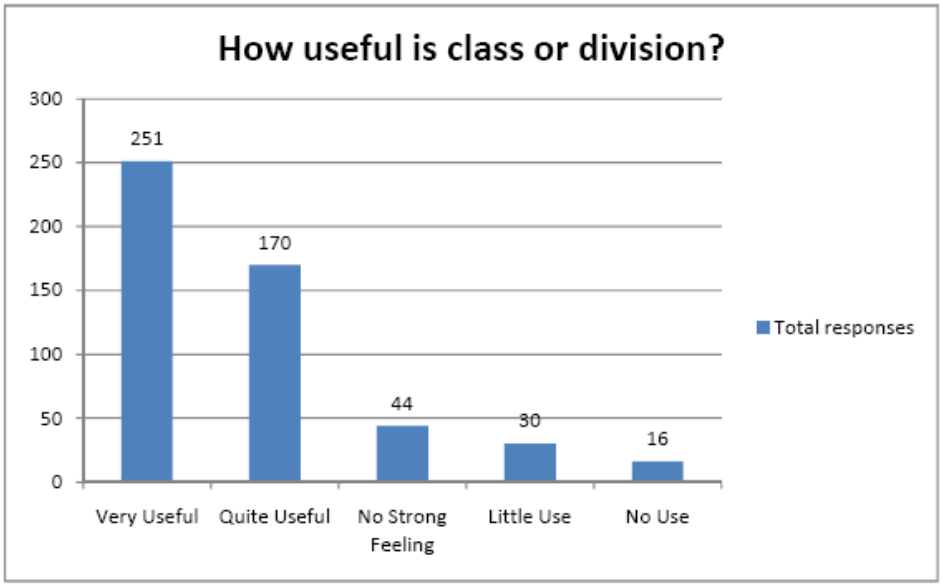

How useful is proper net quantity / gross mass?
300
250
200
150
100
50
0
240
158
64
28
18
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

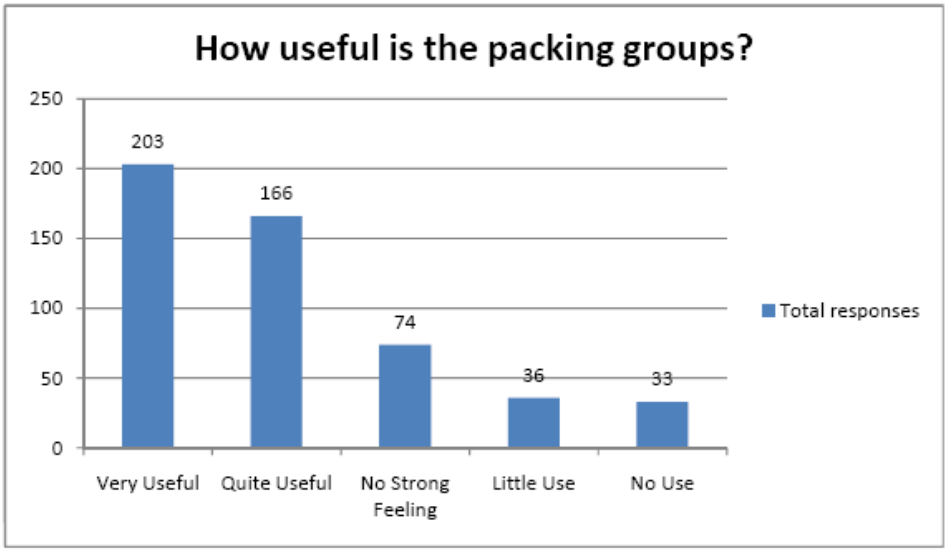

How useful is Aerodrome where package is unloaded?
250
200
150
100
50
0
196
129
83
45
59
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

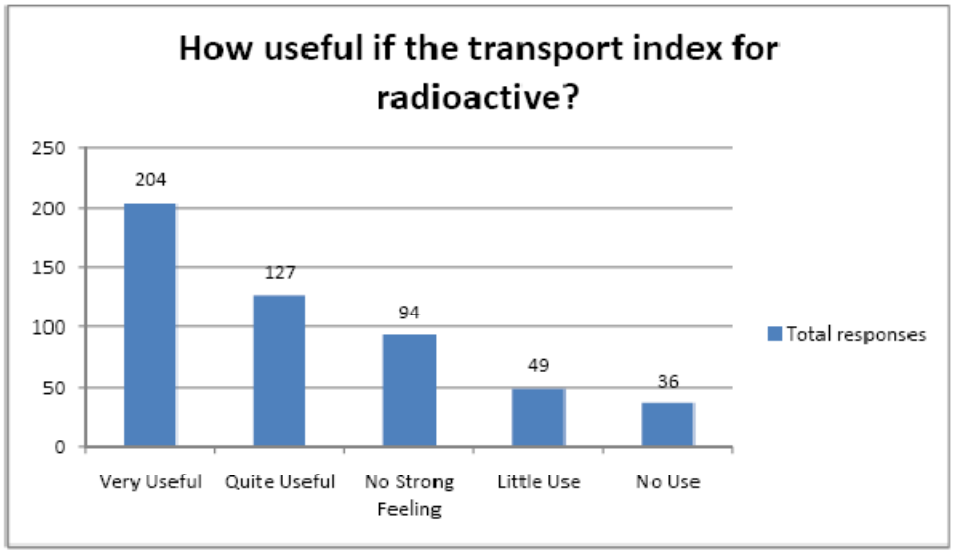

How useful is the state exemption indication?
140
120
100
80
60
40
20
0
128
111
124
59
90
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

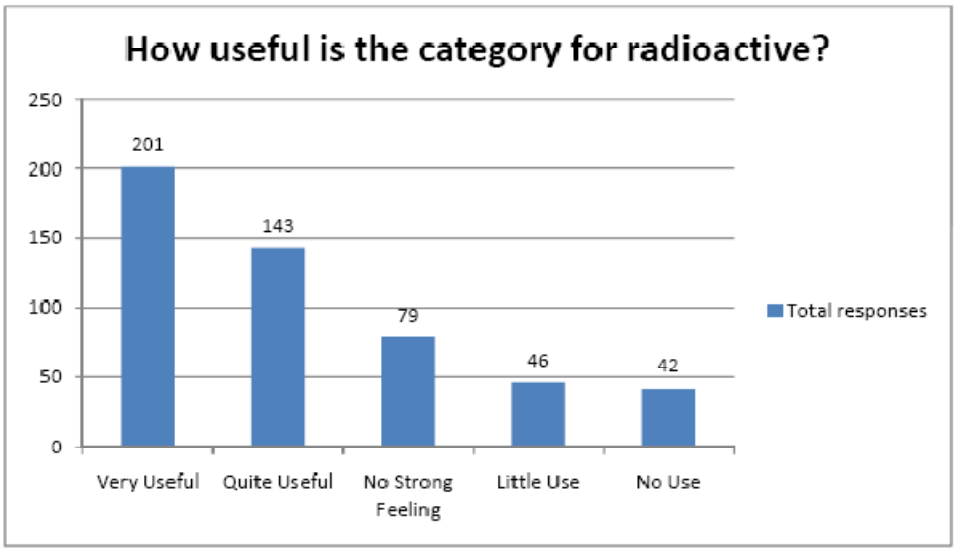

How useful is the emergency drill code?
300
250
200
150
100
50
0
271
116
50
37
39
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

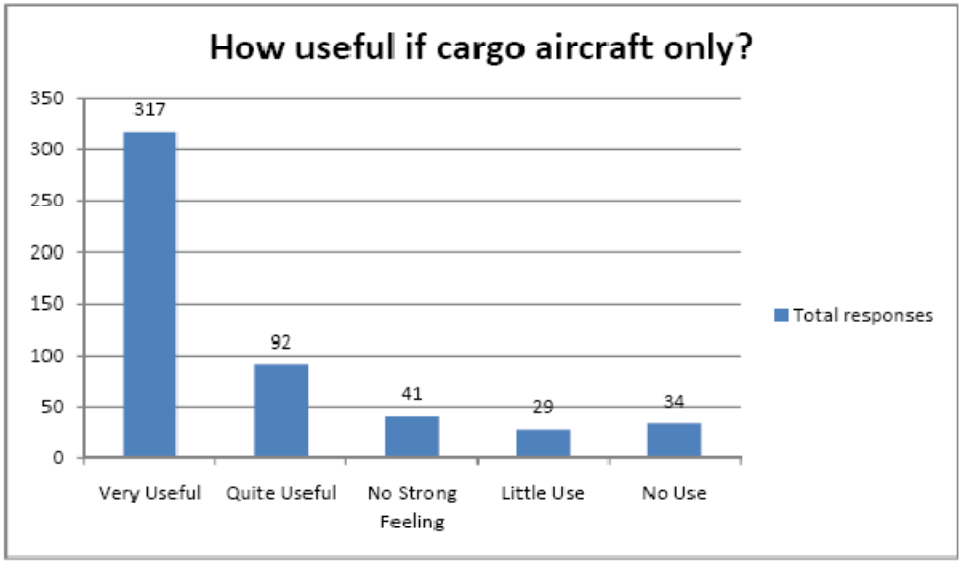

How useful is the UN number?
140
120
100
80
60
40
20
0
107
111
122
87
83
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

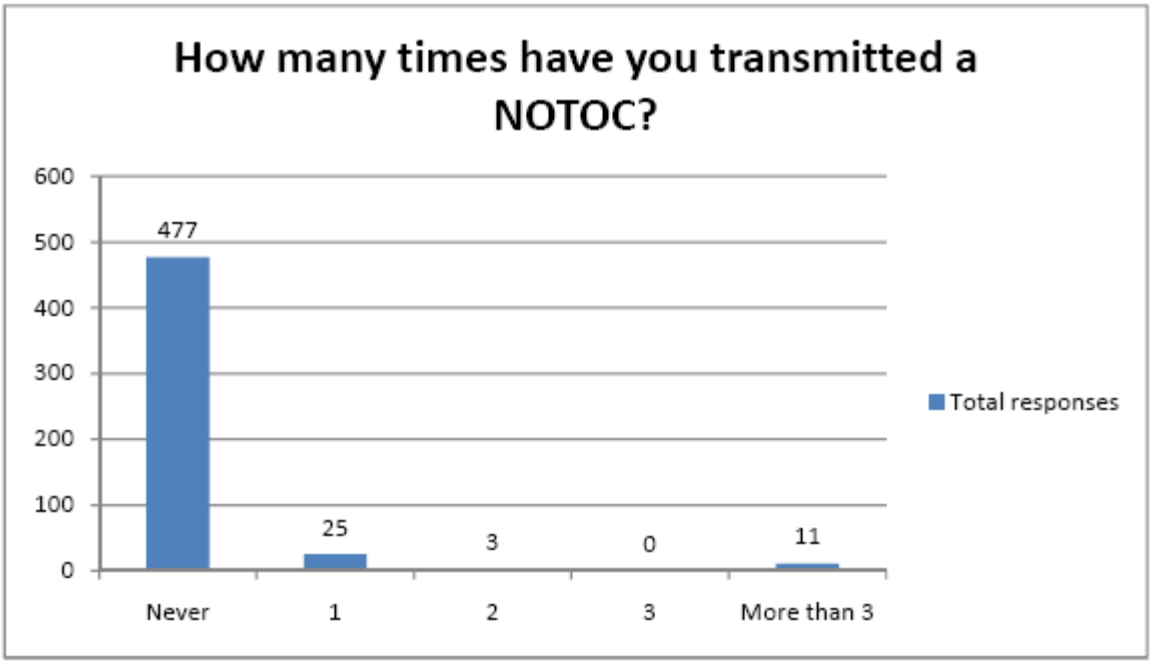

How useful is class or division?
300
250
200
150
100
50
0
251
170
44
30
16
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

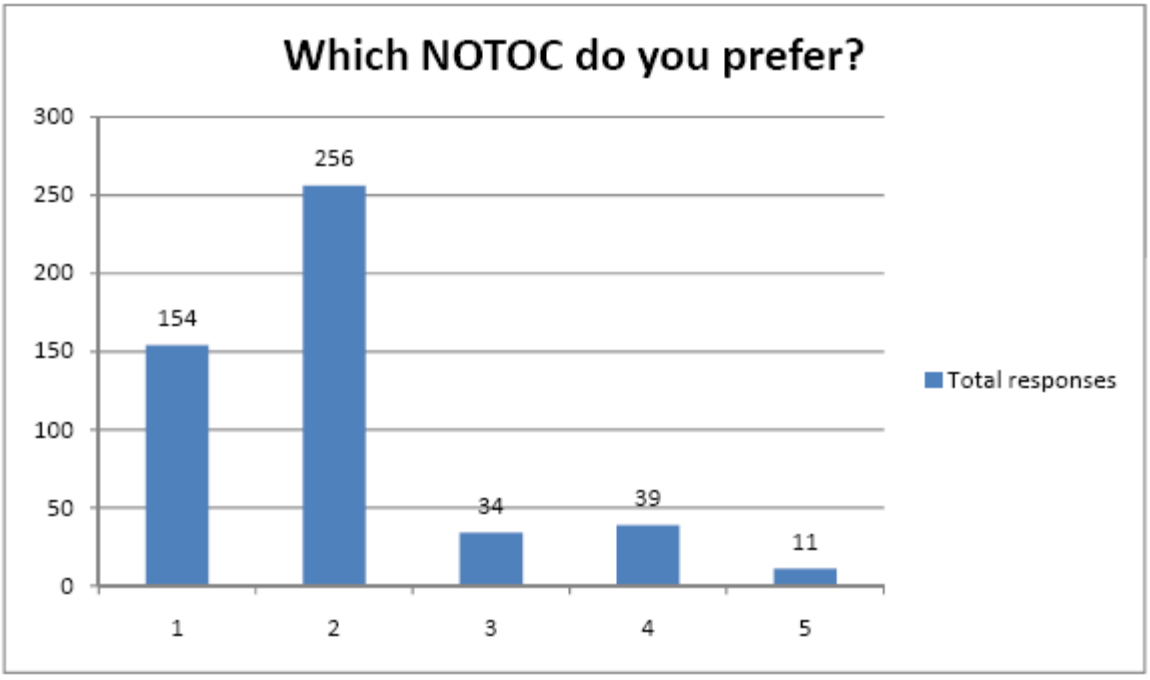

How useful is the packing groups?
250
200
150
100
50
0
203
166
74
36
33
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful if the transport index for radioactive?
250
200
150
100
50
0
204
127
94
49
36
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful is the category for radioactive?
250
200
150
100
50
0
201
143
79
46
42
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

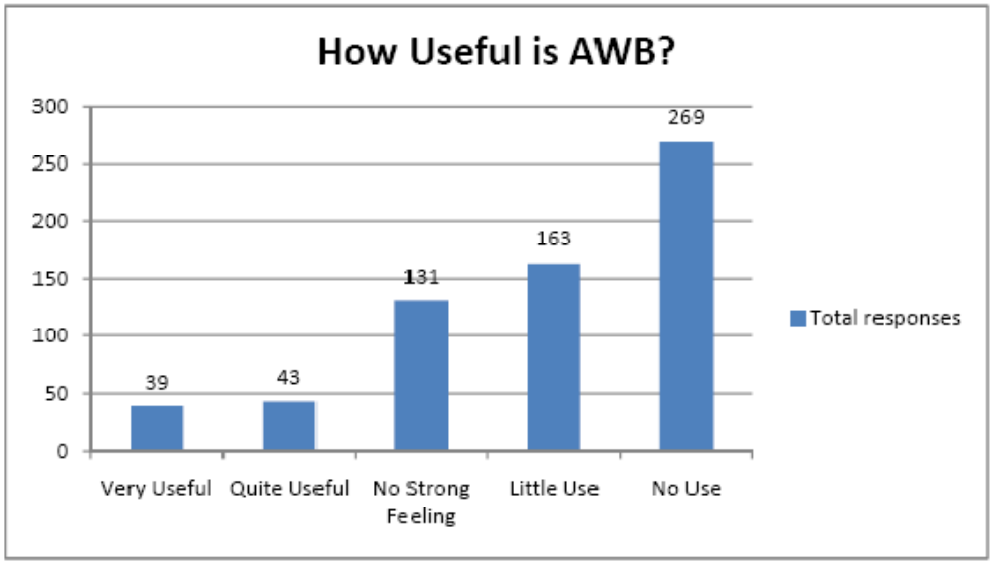

How useful if cargo aircraft only?
350
300
250
200
150
100
50
0
317
92
41
29
34
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

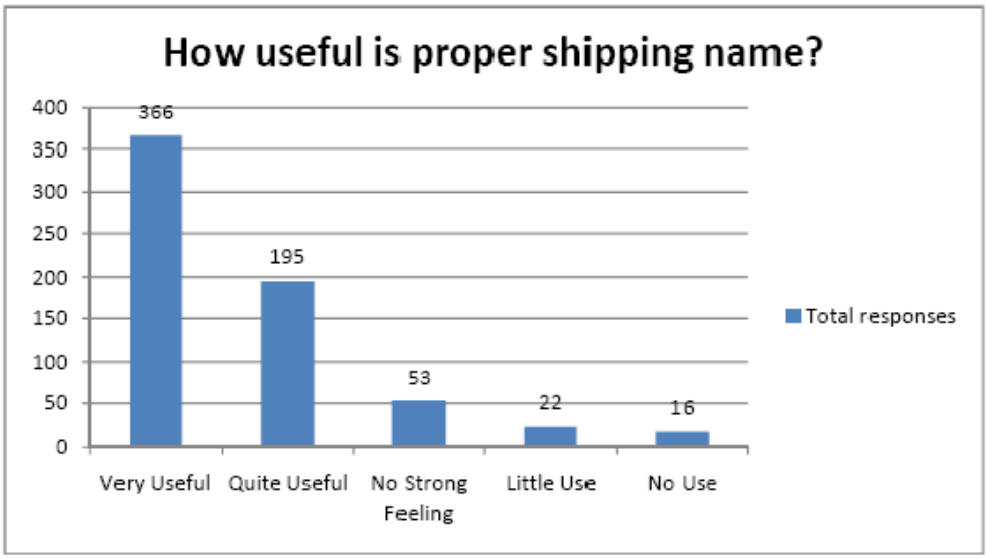

How many times have you transmitted a NOTOC?
600
500
400
300
200
100
0
477
25
3
0
11
Never
1
2
3
More than 3
Total responses

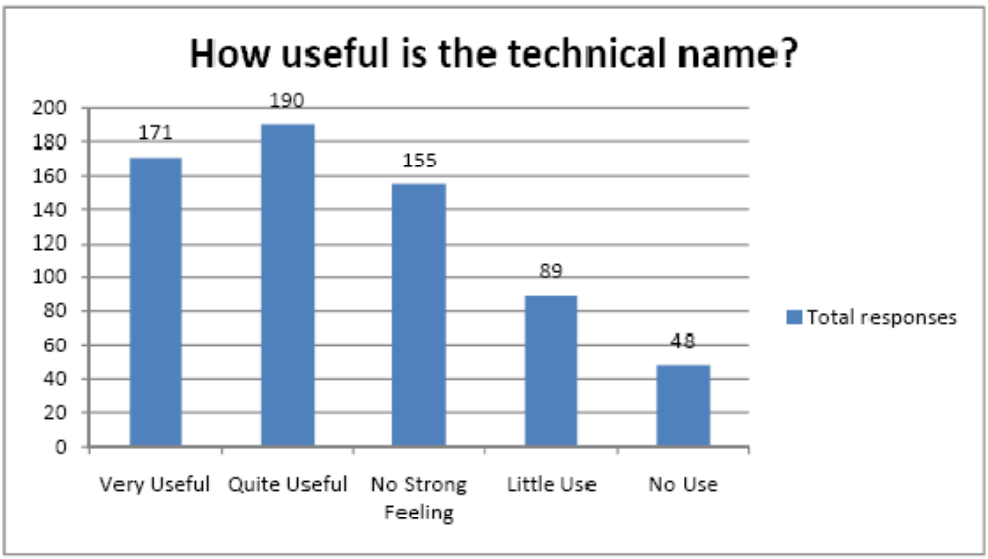

Which NOTOC do you prefer?
300
250
200
150
100
50
0
154
256
34
39
11
1
2
3
4
5
Total responses

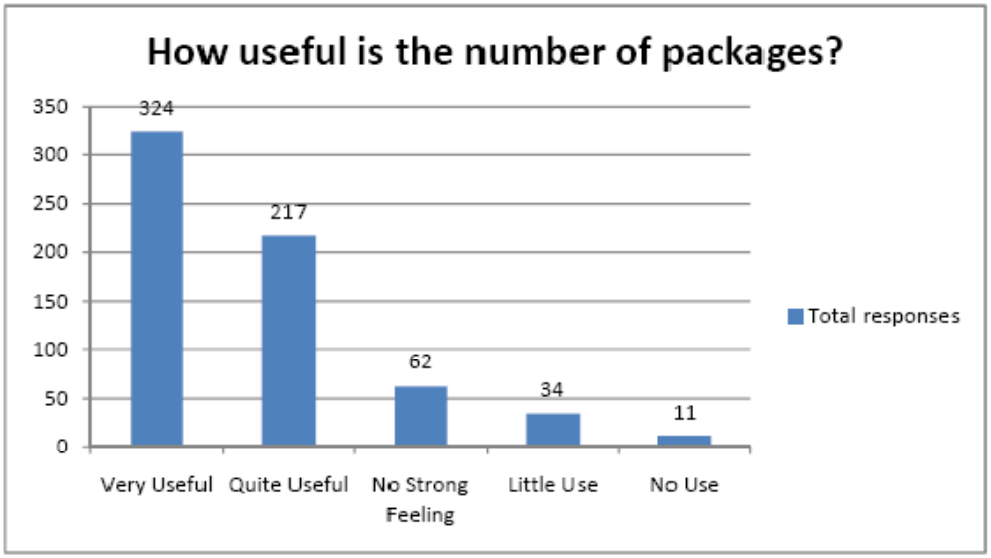
— — — — — — — —

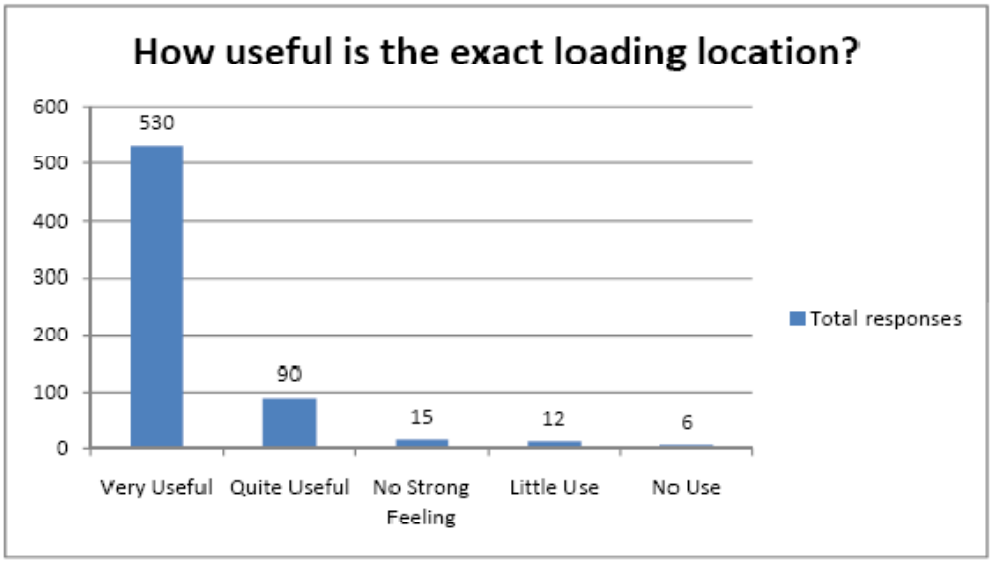
APPENDIX D

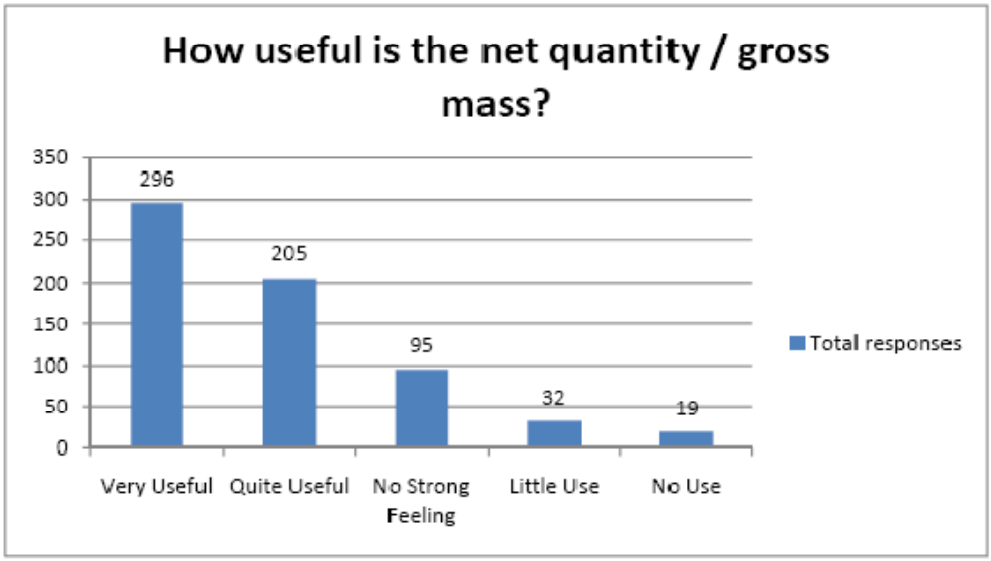

How Useful is AWB?
300
250
200
150
100
50
0
39
43
131
163
269
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

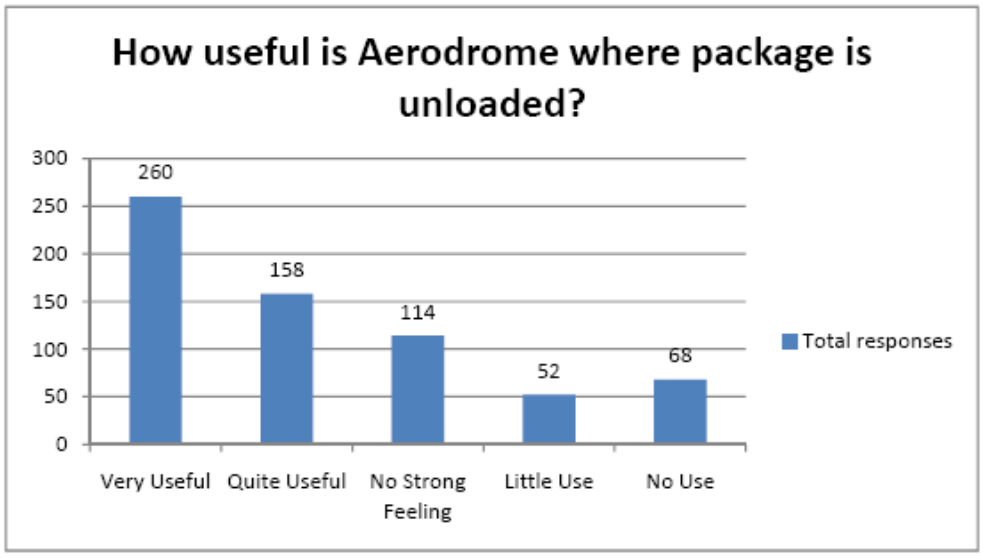

How useful is proper shipping name?
400
350
300
250
200
150
100
50
0
366
195
53
22
16
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

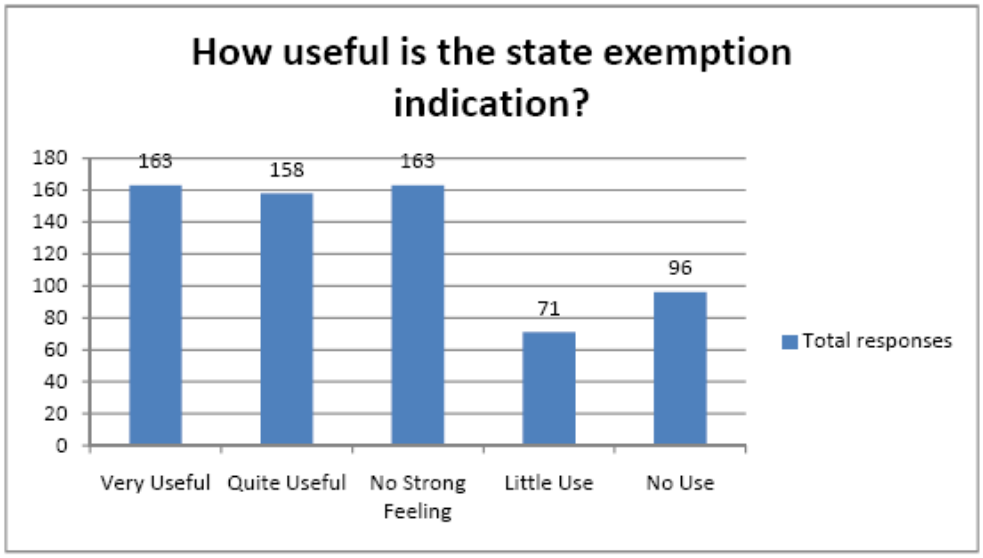

How useful is the technical name?
200
180
160
140
120
100
80
60
40
20
0
171
190
155
89
48
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

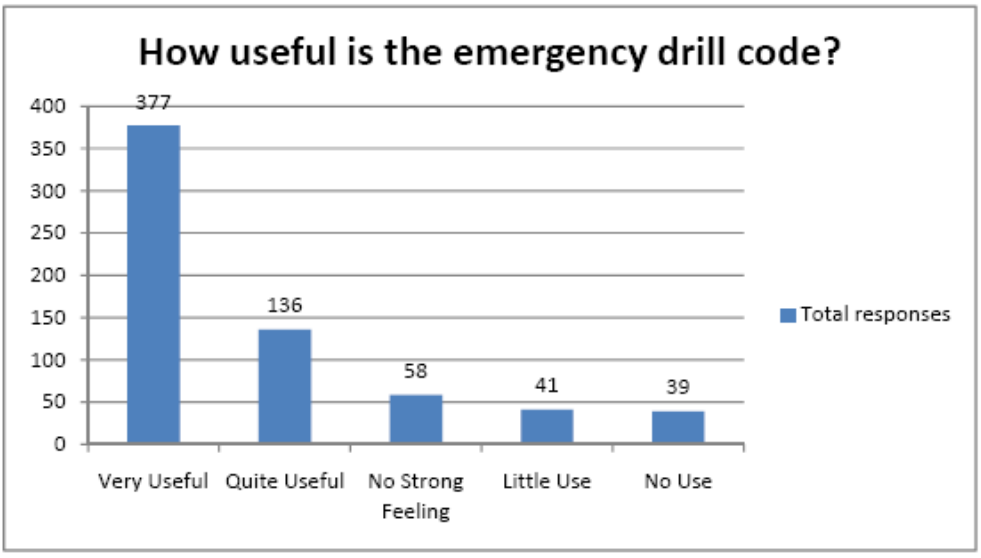

How useful is the number of packages?
350
300
250
200
150
100
50
0
324
217
62
34
11
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

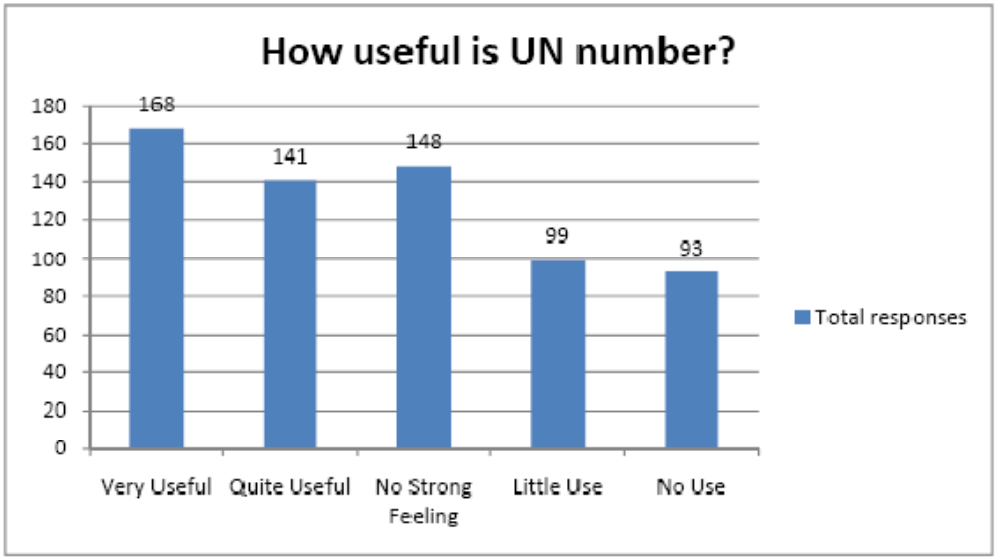

How useful is the exact loading location?
600
500
400
300
200
100
0
530
90
15
12
6
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

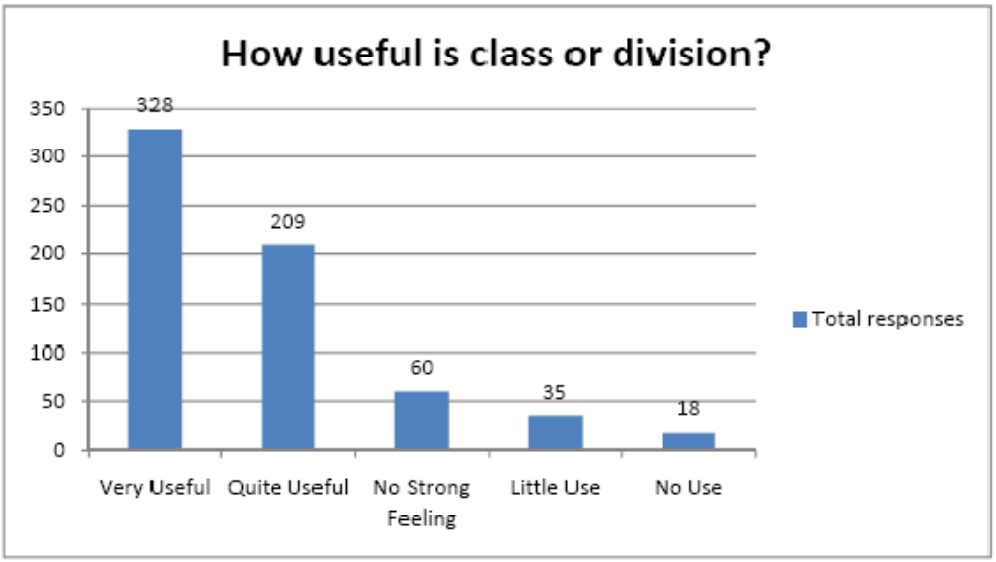

How useful is the net quantity / gross mass?
350
300
250
200
150
100
50
0
296
205
95
32
19
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

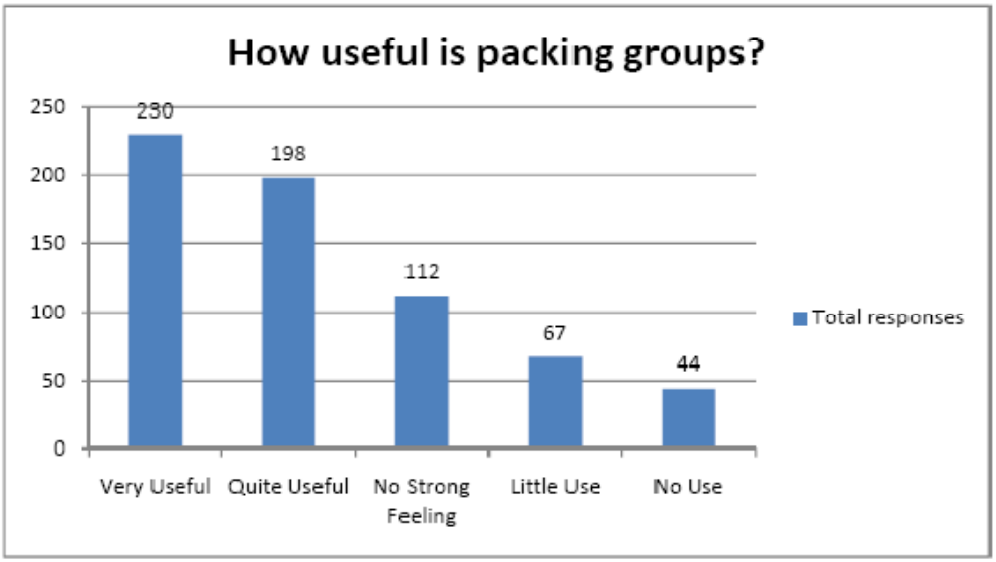

How useful is Aerodrome where package is unloaded?
300
250
200
150
100
50
0
260
158
114
52
68
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

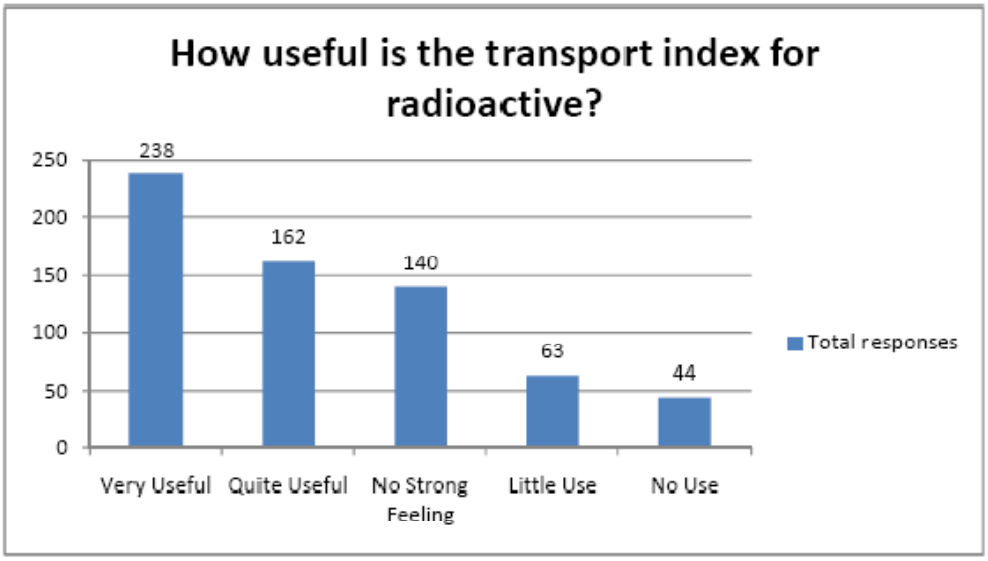

How useful is the state exemption indication?
180
160
140
120
100
80
60
40
20
0
163
158
163
71
96
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

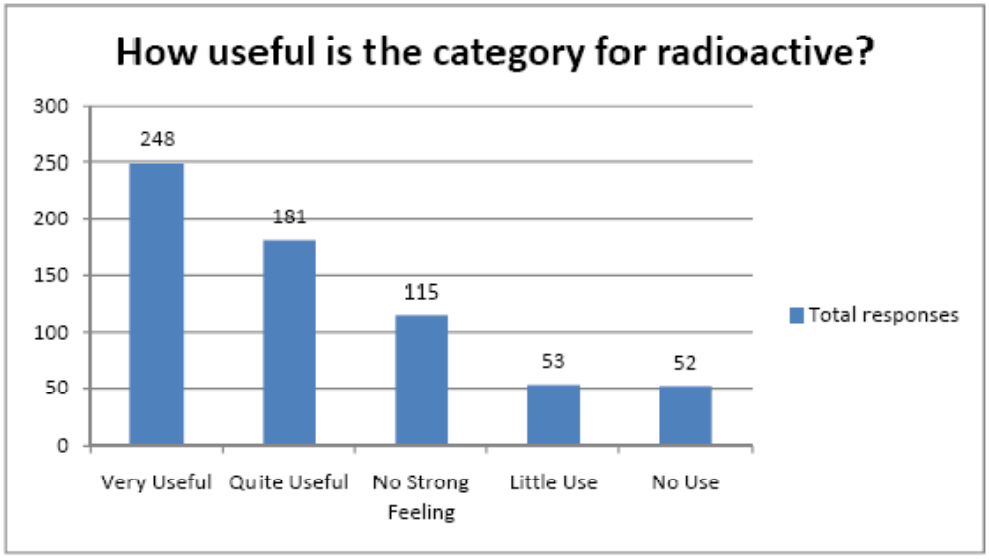

How useful is the emergency drill code?
400
350
300
250
200
150
100
50
0
377
136
58
41
39
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

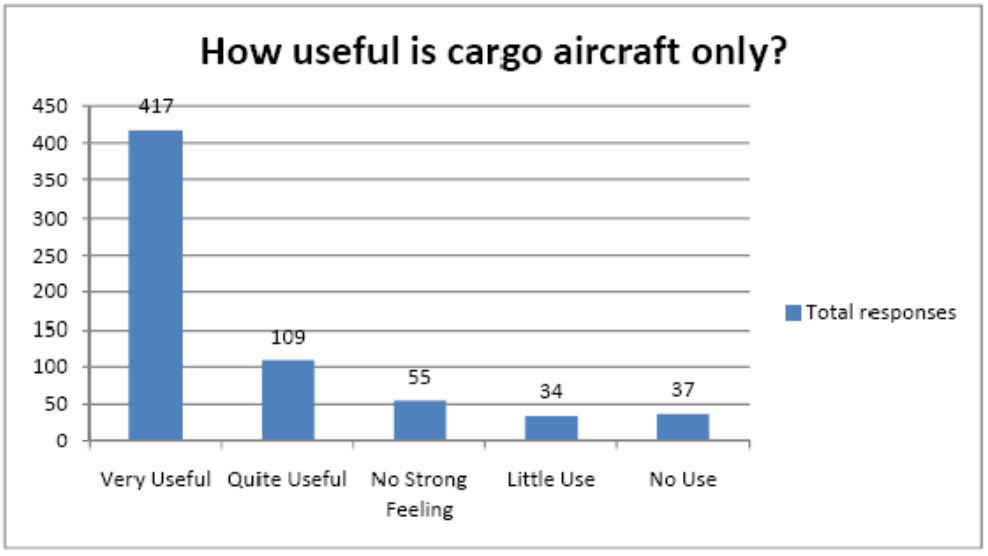

How useful is UN number?
180
160
140
120
100
80
60
40
20
0
168
141
148
99
93
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

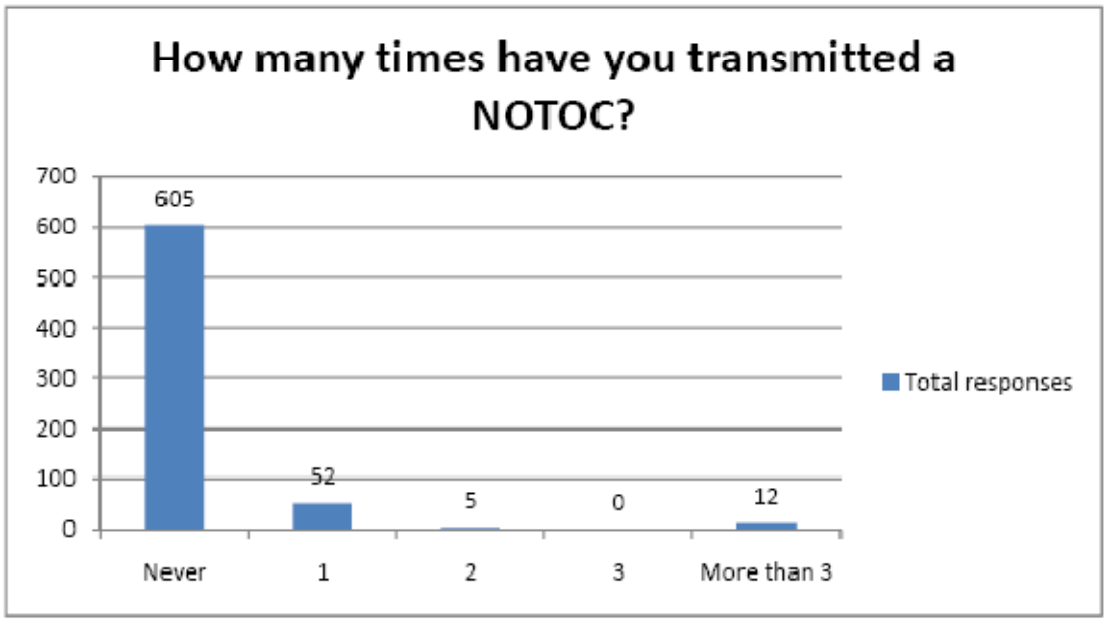

How useful is class or division?
350
300
250
200
150
100
50
0
328
209
60
35
18
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses

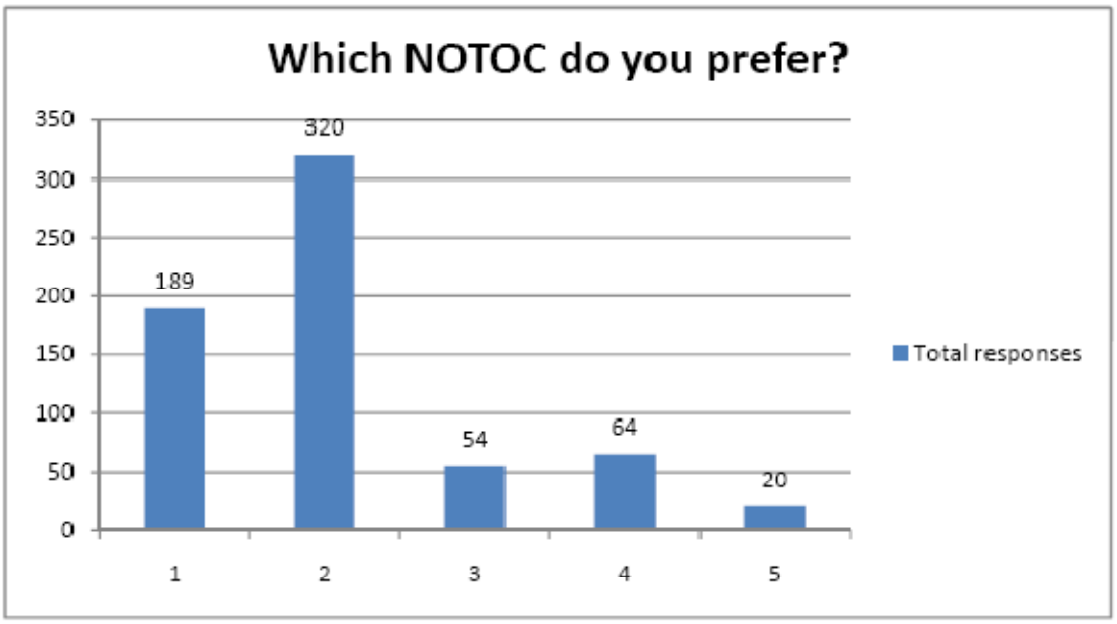

How useful is packing groups?
250
200
150
100
50
0
230
198
112
67
44
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful is the transport index for radioactive?
250
200
150
100
50
0
238
162
140
63
44
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful is the category for radioactive?
300
250
200
150
100
50
0
248
181
115
53
52
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How useful is cargo aircraft only?
450
400
350
300
250
200
150
100
50
0
417
109
55
34
37
Very Useful
Quite Useful
No Strong Feeling
Little Use
No Use
Total responses


How many times have you transmitted a NOTOC?
700
600
500
400
300
200
100
0
605
52
5
0
12
Never
1
2
3
More than 3
Total responses


Which NOTOC do you prefer?
350
300
250
200
150
100
50
0
189
320
54
64
20
1
2
3
4
5
Total responses

— — — — — — — —

APPENDIX E

Option 1. The current requirement

STATION OF LOADING London Gatwick	**FLIGHT NO.** IC 811	**AIRCRAFT REGN.** G-PIGN	**DATE** 15 June 2010	**PREPARED BY:** Signed.....

Station of unloading	Air waybill no.	No. of packages	UN no.	Proper shipping name	Class or division	Subsidiary risk	Net quantity or TI & category of each package	Packing group	CAO (X)	Carried under State exemption (X)	Loading position
MME	010-1845 5841	3	UN 1263	Paint	3		5L	III			31R
MME	010-1845 5841	3	UN1263	Paint	3		60L	II	X		33R
MME	010-1845 5841	20	UN 1718	Butyl acid phosphate	8		5L	III			32L
MME	010-1845 1231	3	UN 1263	Paint	3		5L	III			31R
MME	010-1845 6089	3	UN 1263	Paint	3		5L	III			22L
MME	010-1845 6089	3	UN 1263	Paint	3		10L	III			22L
MME	010-1845 6089	3	UN 1263	Paint	3		20L	III			22L
MME	010-1845 9998	3	UN 2515	Bromoform	6.1		5L	III			51
MME	010-1845 9998	1	UN 1848	Propionic acid	8		5L	III			32L
MME	010-1845 5841	1	UN 1221	Isopropylamine	3	8	2.5L	I	X		31R
MME	010-1845 5841	10	UN 1993	Flammable liquid n.o.s (Acetone and 1,2,3,6-tetrahydrobenzaldehyde solution)	3		20L	III			31R
MME	010-1845 3256	50	UN 1203	Motor spirit	3		4L	II			22R
MME	010-1845 3256	10	UN 1203	Motor spirit	3		5L	II			22R
MME	010-1845 3256	300	UN 1203	Motor spirit	3		2L	II			22R

I CONFIRM THAT THE PACKAGES LISTED ABOVE WERE LOADED AS SHOWN AND THERE WAS NO EVIDENCE OF ANY DAMAGED OR LEAKING PACKAGES. Signed:..... Status:.....	CAPTAINS SIGNATURE: .....

Option 2 as presented in the questionnaire

STATION OF LOADING London Gatwick	**FLIGHT NO.** IC 811	**AIRCRAFT REGN.** G-PIGN	**DATE** 15 June 2010	**PREPARED BY:** Signed.....

Loading position	No. of packages	UN no.	Proper shipping name	Class or division	Sub-risk	Total quantity	Packing group	Drill code
Forward hold	9	UN 1263	PAINT	3		105L	III	3L
	360	UN 1203	MOTOR SPIRIT	3		850L	II	3H
Rear hold	6	UN 1263	PAINT	3		30L	III	3L
	3	UN 1263	PAINT	3		180L	II	3L
	20	UN 1718	BUTYL ACID PHOSPHATE	8		100L	III	8L
	3	UN 2515	BROMOFORM	6.1		15L	III	6L
	1	UN 1848	PROPIONIC ACID	8		5L	III	8L
	1	UN 1221	ISOPROPYLAMINE	3	8	2.5L	I	3CH
	10	UN 1993	FLAMMABLE LIQUID N.O.S.	3		200l	III	3l

I CONFIRM THAT THE PACKAGES LISTED ABOVE WERE LOADED AS SHOWN AND THERE WAS NO EVIDENCE OF ANY DAMAGED OR LEAKING PACKAGES. Signed:..... Status:.....	CAPTAINS SIGNATURE: .....

Option 2 with the addition of station of unloading

STATION OF LOADING London Gatwick	**FLIGHT NO.** IC 811	**AIRCRAFT REGN.** G-PIGN	**DATE** 15 June 2010	**PREPARED BY:** Signed.....

Loading position	Station of unloading	No. of packages	UN no.	Proper shipping name	Class or division	Sub-risk	Total quantity	Packing group	Drill code
Forward hold	MME	9	UN 1263	PAINT	3		105L	III	3L
	MME	360	UN 1203	MOTOR SPIRIT	3		850L	II	3H
Rear hold	MME	6	UN 1263	PAINT	3		30L	III	3L
	MME	3	UN 1263	PAINT	3		180L	II	3L
	MME	20	UN 1718	BUTYL ACID PHOSPHATE	8		100L	III	8L
	MME	3	UN 2515	BROMOFORM	6.1		15L	III	6L
	MME	1	UN 1848	PROPIONIC ACID	8		5L	III	8L
	MME	1	UN 1221	ISOPROPYLAMINE	3	8	2.5L	I	3CH
	MME	10	UN 1993	FLAMMABLE LIQUID N.O.S.	3		200L	III	3L

I CONFIRM THAT THE PACKAGES LISTED ABOVE WERE LOADED AS SHOWN AND THERE WAS NO EVIDENCE OF ANY DAMAGED OR LEAKING PACKAGES. Signed:..... Status:.....	CAPTAINS SIGNATURE: .....

Option 2 with the addition of station of unloading and an indication that carriage must be by cargo aircraft

STATION OF LOADING London Gatwick	**FLIGHT NO.** IC 811	**AIRCRAFT REGN.** G-PIGN	**DATE** 15 June 2010	**PREPARED BY:** Signed.....

Loading position	Station of unloading	No. of packages	UN no.	Proper shipping name	Class or division	Sub- risk	Total quantity	Packing group	CAO (x)	Drill code
Forward hold	MME	9	UN 1263	PAINT	3		105L	III		3L
	MME	360	UN 1203	MOTOR SPIRIT	3		850L	II		3H
Rear hold	MME	6	UN 1263	PAINT	3		30L	III		3L
	MME	3	UN 1263	PAINT	3		180L	II	X	3L
	MME	20	UN 1718	BUTYL ACID PHOSPHATE	8		100L	III		8L
	MME	3	UN 2515	BROMOFORM	6.1		15L	III		6L
	MME	1	UN 1848	PROPIONIC ACID	8		5L	III		8L
	MME	1	UN 1221	ISOPROPYLAMINE	3	8	2.5L	I	X	3CH
	MME	10	UN 1993	FLAMMABLE LIQUID N.O.S.	3		200L	III		3L

I CONFIRM THAT THE PACKAGES LISTED ABOVE WERE LOADED AS SHOWN AND THERE WAS NO EVIDENCE OF ANY DAMAGED OR LEAKING PACKAGES. Signed:..... Status:.....	CAPTAINS SIGNATURE: .....

Option 2 with the addition of station of unloading, an indication that carriage must be by cargo aircraft and that carriage is under a state exemption

STATION OF LOADING London Gatwick	**FLIGHT NO.** IC 811	**AIRCRAFT REGN.** G-PIGN	**DATE** 15 June 2010	**PREPARED BY:** Signed.....

Loading position	Station of unloading	No. of packages	UN no.	Proper shipping name	Class or division	Sub-risk	Total quantity	Packing group	CAO (x)	Exemption (x)	Drill code
Forward hold	MME	9	UN 1263	PAINT	3		105L	III			3L
	MME	360	UN 1203	MOTOR SPIRIT	3		850L	II			3H
Rear hold	MME	6	UN 1263	PAINT	3		30L	III			3L
	MME	3	UN 1263	PAINT	3		180L	II	X		3L
	MME	20	UN 1718	BUTYL ACID PHOSPHATE	8		100L	III			8L
	MME	3	UN 2515	BROMOFORM	6.1		15L	III			6L
	MME	1	UN 1848	PROPIONIC ACID	8		5L	III			8L
	MME	1	UN 1221	ISOPROPYLAMINE	3	8	2.5L	I	X		3CH
	MME	10	UN 1993	FLAMMABLE LIQUID N.O.S.	3		200L	III			3L

I CONFIRM THAT THE PACKAGES LISTED ABOVE WERE LOADED AS SHOWN AND THERE WAS NO EVIDENCE OF ANY DAMAGED OR LEAKING PACKAGES. Signed:..... Status:.....	CAPTAINS SIGNATURE: .....

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