6 Transportation

When transporting your gauge to, from, or within the United States, the Department of Transportation regulations contained in Title 49 of the Code of Federal Regulations (49 CFR) parts 100-185 pertaining to the transport of radioactive material must be followed. These regulations apply to your transportation of the gauge to and from the job site as well as by common carrier or air freight.

The USDOT also allows the use of IATA (International Air Transport Association) regulations for transportation within the USA. Some air carriers, for instance FedEx, may prefer the use of IATA regulations. IATA regulations are always used for international shipments.

As the shipper, you are responsible for insuring that your shipment complies with the requirements of the governing authorities. Be aware that fines for non-compliance can be imposed. As the device manufacturer, we will assist you with the information needed to meet these requirements. Since shipping requirements may change over time, Seaman provides current instructions with gauges shipped from the factory. If it has been longer than one year since you have received updated instructions, ask our shipping department if updated instructions are needed. These instructions are current as of July 2003.

For reference, USDOT regulations may be viewed on-line at http://hazmat.dot.gov. IATA regulations may be purchased at http://www.iata.org.

Employee transportation training

All employees who transport or prepare hazmat (hazardous materials), such as your gauge, for shipment must have had initial or recurrent hazmat training within the last 3 years for USDOT requirements and the last 2 years for IATA (international shipments only) requirements. This training may be conducted by the employer. Seaman training courses also provide the required hazmat training. 49 CFR 172 Subpart H. Also 49 CFR 173.1(b). IATA 1.5.

Inspection

Before transportation, you must ensure that:

- The gauge is transported in a Type A package. The case provided with your gauge has been tested and meets the requirements of a Type A package. See the Type A package certificate supplied with your gauge.
- Check that "the packaging is in unimpaired physical condition, except for superficial marks." 49 CFR 173.475(b). For example, the case should not be cracked. The case hinges, lock and latch mechanisms should be functional.
- The radiation level must be within the requirements for the Yellow-II label and Transport Index. This can be satisfied by insuring that your gauge's source is in the shielded position during shipment. For Seaman models C-300 and C-200, this is indicated by the carrying handle being in the vertical position. For the models C-75 and DOR, refer to the instructions on the device. The model R-50 does not have a shielded position and it is adequate for transport as is.
- Package marking and labels are legible and unobscured.
- The leak test certificate is current at the time of shipment. 49 CFR 173.475
- The case must have a seal or padlock to show the package has not been tampered with. 49 CFR 173.412(a)
- Shipping documents appropriate for the method of transportation. See below.
- Place the appropriate records on file. See Record keeping.

Private transportation

When you transport your gauge on public roads the following are required:

1. The gauge must be in a Type A container. Your Seaman Nuclear shipping case is a Type A container.
2. We recommend that the gauge be transported in the rear of the vehicle, three feet (one meter) away from occupants. Before placing gauges in a vehicle closer than three feet to a person, or when transporting more than 10 gauges, consider the table below. The USDOT has specified minimum distances between a person and any point on a package containing a gauge when transporting. See the table below from 49 CFR 177.842. For example: Two C-300s with T.I. of 0.6 each have a total T.I. of 1.2. The nearest point on either package must be at least two feet from a person.

T.I. Transport Index can be found on the yellow label on the gauge case.

Total T.I. (Transport Index)	Feet
0.1 to 1.0	1
1.1 to 5.0	2
5.1 to 10.0	3
10.1 to 20.0	4
20.1 to 30.0	5
30.1 to 40.0	6
40.1 to 50.0	7

3. The transport case "must be secured to prevent shifting during normal transportation conditions." 49 CFR 173.448(a) and 177.834(a). Make sure it is secured and braced, especially when carried in an open area such as the bed of a pickup truck.
4. The case and gauge must be secured to prevent theft during transportation and storage. Increased security awareness has been mandidated since 9/11. You are required to take whatever measures are necessary in your circumstances to prevent loss of the gauge.
5. Ensure that the shipping paper is readily available to, and recognizable by, authorities in the event of accident or inspection. According to 49 CFR 172.200-203, the driver shall:
   A. Clearly distinguish the Shipping Paper, if it is carried with other papers, by either distinctively tabbing it or by having it appear first; and
   B. The shipping paper shall be: (1) Within immediate reach of the driver when restrained by the lap belt; and (2) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle.

Shipping Papers, classify and describe the radioactive materials in the gauge.

Emergency Response Information, provides instructions to emergency responders about the nature of the risk in accident conditions and appropriate actions. This information may be photocopied on the back of the Shipping Papers.

C. When the driver is not at the vehicle's controls, the shipping paper shall be: (A) In a holder which is mounted to the inside of the door on the driver's side of the vehicle; or (B) on the driver's seat in the vehicle.

6. Emergency Response Information must be immediately available 49 CFR 172.600 (c) (1). The supplied Shipping Papers have the Emergency Response Information on the back side.

Other items are also recommended:

- Gauge operating procedures (Operator's Manual).
- Accident procedures (in Operator's Manual).
- A copy of your radioactive materials license or registration.
- Radiation sign, in event the gauge needs to be stored apart from the vehicle.
- Applicable regulations.

Transportation by common carrier or air cargo

Acceptable carriers are cargo only aircraft and truck lines. Gauges cannot be shipped by UPS, Postal Service, or passenger bus lines.

The shipping documents are dependent on the type of transportation.

Air shipments

For transport by air, provide two copies of the "Shippers Declaration of Dangerous Goods" with the Air Bill. Gauges that contain cesium or americium sources require a copy of the Certificate of Competent Authority for each material to accompany the shipment.

Truck shipments

For transport by commercial trucking, the document needed is a Bill of Lading that contains a description of the hazardous material. Vehicle placarding is not required for packages meeting Yellow-II requirements, such as Seaman gauges.

Marking and Labeling shipping cases

The USDOT and IATA require packages to be marked (with permanent marker or decal) to indicate description of contents and the place origin or destination. There is a further requirement for warning and descriptive labels.

The "Type A" decal meets the marking requirement to indicate the package type and the proper shipping name. "RQ" (Reportable Quantity) is shown on the decal if the gauge contains an Americium source. 49 CFR 172.301, .304, and .310.

For air freight shipments, an **Air Eligible** decal is a marking to indicate that the package meets the applicable requirements for air transport. 49 CFR 172.321.

Shipping case labels must be unobstructed and undamaged.

The two required labels are: the "Yellow II", and "Danger" labels:

The "Yellow II" radiation label indicates the radioactive material, activity, and the transport index. The Transport Index (T.I.) is the maximum radiation level in mR (milliroentgen) per hour at 1 meter from the external surface of the package. The maximum T.I. for Yellow II is 1.0. Seaman gauges are within the Yellow II classification. 49 CFR 172.403.

Labels are shown at the end of this chapter.

The orange "Danger" label must appear on any package offered for shipment by air, and indicates that the it may not be loaded on passenger carrying aircraft. Note, loading on small, private aircraft is not prohibited, provided no paying passengers are being carried while the hazmat is present. 49 CFR 172.402(c).

Record keeping

A shipper must have certain records on file for at least 375 days after the latest shipment (except as noted).

1. **Hazmat (hazardous material) Training Records** - retain for three years.
2. **Leak test certificate current at time of shipment** - retain for the life of the gauge.
3. **Type A package testing results**. 49 CFR 173.415(a)
4. Shipping Documents as applicable:
   A. For shipment by common carrier (truckline) retain a copy of the **Bill of Lading** or
   B. For shipment by air cargo carrier, retain a copy of the **Shipper's Declaration, Air Bill,** and for gauge containing cesium or americium, a **Certificate of Competent Authority**, also called Special Form Certificate. This document shows approval of source capsule design by a "competent authority". Check the expiration date before

shipping and request a current one from Seaman if needed. 49 CFR 173.476(a) or

C. For private transportation, retain a single copy of the Shipping Papers and Emergency Response Information on file and tracking the transportation activity with a Utilization Log for each gauge owned. The Log should show the date in/out, person transporting, and destination. 49 CFR 172.201 and 172.600-602.

5. **Emergency Response Information**: This is printed on the back of the provided Shipping Paper. It describes the degree of hazard and means to deal with it in the event of an accident during transportation. See sample. This must also be available at any facility where hazmat is received, stored, or handled during transportation. 49 CFR 172.600-602.

Accident reporting

Immediate notification to the USDOT, 800-424-8802 must be made when, "as a direct result of hazardous material", in the course of transportation, there is severe injury, physical damage over $50,000, or evacuation required. 49 CFR 171.15. Notification should also be made to the licensing agency in your state.

Returning your gauge for service

When returning your gauge to the factory for service, be sure to include the standard count reference, battery(s), charger, and a note explaining the reason for service.

Shipping container labels

The CARGO AIRCRAFT ONLY label is only required for passenger air freight within the USA.

The AIR ELIGIBLE decal meets a marking requirement for air shipments prepared according to IATA regulations. Effective late 2003.

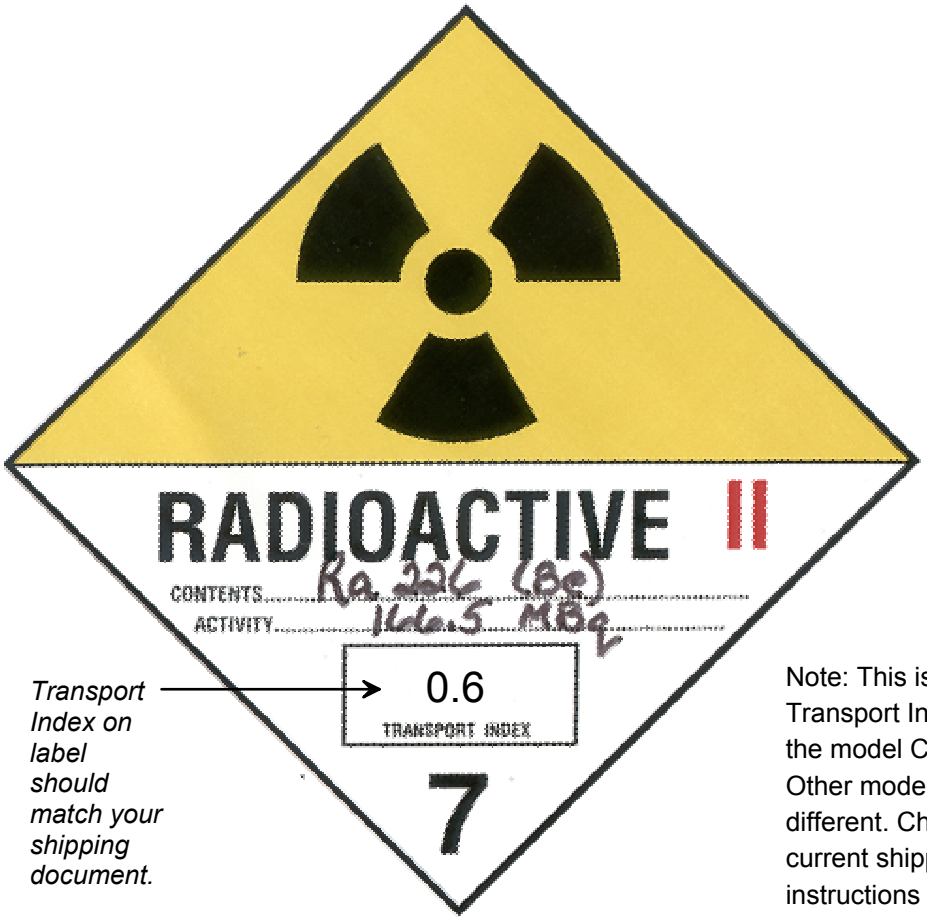
Labels for gauges containing radium

Radioactive Materials,

TYPE A

Package, UN2915,
USA DOT 7A

Seaman Nuclear Corporation Tel 414-762-5100
7315 South First Street, Oak Creek, WI 53154, USA



Transport Index on label should match your shipping document.

Note: This is □ Transport Index for □ the model C-300. □ Other models will be □ different. Check □ current shipping □ instructions for your □ model.

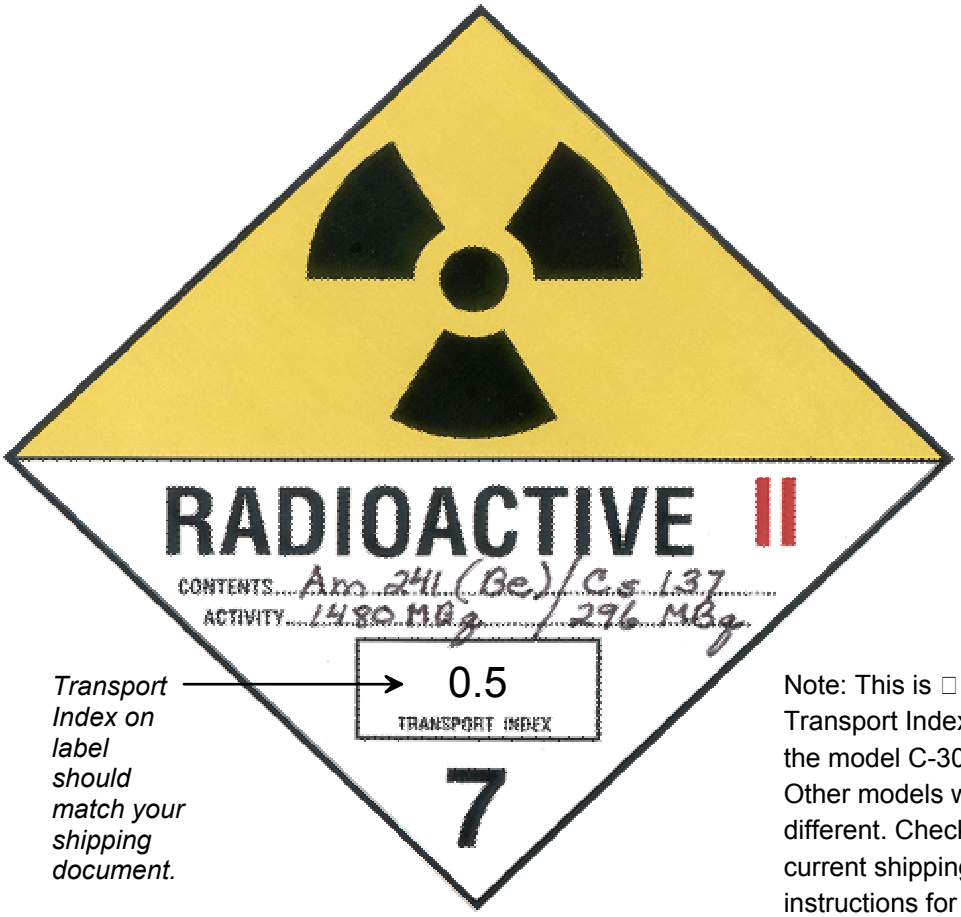
Labels for gauges containing americium and cesium

RQ, Radioactive Materials,

TYPE A

Package, Special Form,
UN3332, USA DOT 7A

Seaman Nuclear Corporation Tel 414-762-5100
7315 South First Street, Oak Creek, WI 53154, USA



Transport Index on label should match your shipping document.

Note: This is the Transport Index for the model C-300. Other models will be different. Check current shipping instructions for your model.