

Issued on behalf of the
Amusement Device Safety Council (ADSC)

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REQUIREMENTS FOR THE PROVISION AND USE OF SCHEDULES FOR NON DESTRUCTIVE TESTING (N.D.T.)

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The HSE have decided to concentrate on the existing requirements for having a NDT schedule available for all rides. This is not a new requirement, but it is now something that they will be looking for during their normal visits to Fairs and Theme Parks.

This schedule consists of two distinct parts, which are:

1. A list of all areas and components of a ride that needs to be inspected using NDT procedures, and at what interval these tests should be carried out.

The precise areas required to be tested and possibly the level of strip down needed to achieve this, should be identified and listed, preferably by the original designer, but advice may also be sought from IBs or other experts who may have the competence to predict areas that may be subject to fatigue failures.

The schedule should contain instructions regarding the intervals at which this NDT needs to be carried out. Again this should preferably be (or have been) drawn up by the original designer, but advice may also be sought from IBs or others who may have the competence.

It is fair to say that experience forms a certain part in all of this, but anyone developing a schedule will need to understand where fatigue might occur regarding the particular device, and in what timescale it might occur.

There will certainly be some instances where basic fatigue calculation will also be required. Anyone working out such calculations should be certain that he is suitably competent, to carry out any calculations required, and if in doubt to seek more technical advice.

2. The precise procedures that should be used for each individual area.

These procedures are generally the province of a competent NDT practitioner, but again should have been already provided by the designer.

The procedures relate only to how the NDT is carried out. For example whether magnetic or ultrasonic should be used, or where precisely to place any probe, or perhaps other special techniques including types of probe etc.

In order to decide upon the correct procedure, details of the component or structure will be needed. Detailed drawings may, but probably will, be required.

The majority of these techniques will be for areas where there are already procedures laid down in technical standards, and in these cases, a level 2 NDT practitioner for the type used will be able to develop the schedules.

However, some welds or structure may need to have individual and special techniques developed, and if such techniques are not already detailed in an "off the shelf" fashion within technical standards, then whilst they may be developed by a level 2 NDT practitioner, they will need to be approved by someone at level 3 for that particular type of NDT.

It should be noted that this particular piece of paperwork is something that belongs to each individual ride, and should be in the operations manual as part of the instructions for maintenance.

It is certainly possible that rides will have the schedules in place, and particularly for newer rides, the designer and/or manufacturer should have provided satisfactory instructions for maintenance, however in general for older rides, but probably to a lesser degree for newer rides, these schedules may need to be developed, or added to. It is important in either case, that all controllers check their manuals to determine that sufficiently detailed NDT schedules are in place. IBs will be able to help in this respect if there is not suitable expertise in house.

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It is certainly also possible that similar rides might be able to use similar schedules, and as such there may be some sharing of these documents, however if there is any structural or mechanical difference at all, then the individual schedules will need to reflect these differences. It is therefore important that controllers using schedules developed in generic fashion ensure that their rides are precisely the same as covered by the shared schedule and amended if not. Each individual ride will still need to have the full paperwork available. It is not acceptable to just say that there is one set of paperwork held for a group of similar devices.

It may also be that some IBs might already have their own test schedules written down for their own purposes, that may be similar to the above, and it is possible that any such documents may be of use in developing the schedules as required above. However again, these can not necessarily be taken to be all that is required, and anyway, the schedules that we are discussing are part of the individual rides, and the law says that it is the controller's responsibility to ensure that they are satisfactory and in place.

IN SUMMARY:

NDT schedules are required for each individual ride

This is not a new requirement, and has been required by British law for some considerable time.

Even on rides where the schedules are in place, it would be sensible to check their content and completeness.

There are two parts to the schedules

1. A list of parts that require NDT on a regular basis, showing the intervals between inspections for each part.

2. The precise details of how to carry out the NDT.

The amount of strip down required will depend upon the particular components listed.

Designers may have supplied many newer rides with the schedules, but particularly older rides may need schedules to be developed, or existing schedules added to. In all cases however now is the time to ensure that they are present and adequate for all rides.

A schedule can only relate to one individual ride, but there may be information to be shared by controllers of similar rides.

If information is shared, then it must be ensured that any differences between similar rides are taken into account.

IBs can assist in developing schedules, (this has been agreed by the ADSC) but IBs, or indeed anyone else, should ensure that they have the relevant experience and competence.

Anyone developing schedules regarding where to carry out the NDT, and when, should be aware that they may need to get more advice from someone who can assist in calculating fatigue lives.

The precise NDT techniques can in most instances be developed by a level 2 NDT practitioner, but if these techniques are not detailed in existing guidance or standards, then any such procedure will need to be approved by someone at level 3.

END