The excellent article by Ralph Jorgensen in the September 2008 Survey Quarterly ‘Certification – Get it right!’ is very timely. There have been several recent cases where the certification of cadastral surveys has been questionable – perhaps as a result of misunderstanding by the certifying surveyor. One such area of misunderstanding appears to be over the meaning of the word ‘direction’ which is used in the Cadastral Survey Act 2002 and the Rules for Cadastral Survey 2002/2 – including the certificate signed for each survey.

Direction of a cadastral survey
Note the following dictionary definitions.

**direction n 1.** directing, aiming, guiding managing (usu in pl) instruction what to do, order

**direct v t 2.** control, govern movements of; guide as advisor, principle; order (person) to do, thing to be done; supervise acting etc (of film, play, etc); give orders;

(7th Ed, Concise Oxford Dictionary)

In order to provide direction for some activity, for something to be done, an essential element appears to be that the director knew about the activity before it took place and provided instructions on how that activity should be performed by others. Can a surveyor claim to have directed some activity, for example survey field work, if they had no knowledge of that activity when it took place?

In an ideal world where surveyors do all the work themselves or personally direct their employees to do the work, there should be no problem. However there are a number of scenarios where this ideal is difficult to achieve and then surveyors must be very careful. Consider the following –

1. The surveyor who carried out or directed the survey is unavailable at the time it is ready to be lodged and certified – perhaps they are on leave, overseas, ill, or have died. Another surveyor in the same firm is asked to certify it.
2. The surveyor who carried out or directed some of the field work leaves the firm and the survey is taken over and completed by another surveyor in the same firm.
3. A surveyor who is unfamiliar with e-survey carries out or directs a survey but then engages another surveyor experienced in e-survey to capture, lodge and certify the survey into Landonline.

4. A technician-based survey firm that does not have a licensed cadastral surveyor, completes the fieldwork and calculations but then sub-contracts the checking, lodging and certifying activity to a cadastral surveyor outside the firm.

5. A survey is returned on requisition and the original certifying surveyor is unavailable, so another surveyor attends to the requisitions. In order to return the survey to LINZ, they have to re-certify it. This new certification covers the correctness of all of the survey – not just the matters raised in the requisitions.

In all these cases, what does the certifying surveyor need to do, to be able to claim that they directed the entire survey?

**Does it matter?**
Yes it does matter. Section 47(1) of the Cadastral Survey Act 2002 General duties in relation to cadastral surveys requires a cadastral survey to be ‘conducted by a cadastral surveyor or a person acting under the direction of a cadastral surveyor’. Also Schedule 2, clause 1(b) states as one of the grounds for a cadastral surveyor to be found guilty of professional misconduct –

(b) to have certified to the accuracy of any cadastral survey or cadastral survey dataset without having personally carried out or directed the cadastral survey and the related field operations.

Performing any of the scenarios outlined above raises questions about whether the certifying surveyor directed the survey – particularly ‘the related field operations’.

In a recent case, the Cadastral Surveyors Licensing Board noted that a large red flag should be raised in the mind of a surveyor invited to belatedly certify a survey. Extreme caution is required and further field work by or under the direction of the certifying surveyor – including personal checks in the field – may be required. Without this, if any error is later found, the certifying surveyor is likely to fall foul of the provisions in Schedule 2 and thus become guilty of professional misconduct.
What is required?

Advice I give in lectures to final year surveying students is that probably the best few minutes they can spend through their career is to carefully read every word of every certification they make and ask themselves – Is this true? Am I sure about this?

I (Name), being a person entitled to practise as a licensed cadastral surveyor, certify that —

(a) The surveys to which this dataset relates are accurate, and were undertaken by me or under my direction in accordance with the Cadastral Survey Act 2002 and the Surveyor-General’s Rules for Cadastral Survey 2002/2

(b) This dataset is accurate, and has been created in accordance with that Act and those Rules.

Risky scenarios

I listed five scenarios above where the question of direction is doubtful. Reviewing these again —

1. Certifying the work of another surveyor who unexpectedly becomes unavailable is very risky. If a senior partner in the firm watches over and exercises direction and oversight of more junior cadastral surveyors, or if there is a thorough and well documented system of field and office processes, peer review and audit, including field audit, then a surveyor might be able to satisfy themselves, and the Board if there proved to be an error, that they exercised direction over that survey from the start. If not, then additional field and office checks should be considered to manage the significant risk that arises to the surveyor’s licence and reputation.

2. The surveyor who takes over the work of another surveyor part-way through should consider including some well documented checks, including field checks, of work already undertaken, so that they can claim to have provided a reasonable level of direction of the whole survey and to minimise the chance of there being an error.

3. Capturing a survey and running validation checks of the data before lodging it is not, by itself, likely to be considered ‘direction ... of the related field operations’ by the Licensing Board. Any surveyor who does this is taking a significant risk. If there is any error in the survey, the lack of direction is likely to become apparent and may result in a complaint to the Board.

4. If a licensed cadastral surveyor is sub-contracting to a firm with field staff but with no licensed surveyors, the licensed surveyor, in establishing the business relationship, should make sure they will be able to demonstrate in the future, if required, that they exercised direction over the surveys.

5. Surveyors should not assume that all errors in a survey will be identified and requisitioned by LINZ – especially not field errors. If a surveyor attends to requisitions of another surveyor and re-certifies the survey, then at the very least they may be required to correct any errors made by the original surveyor that come to light later. But to reduce the risk of professional misconduct, they also need to carefully consider the extent to which it is reasonable for them to rely on the original surveyor’s certification – especially in light of the fact that the survey has been found by LINZ to not be as accurate as it was certified to be.

Simple rules

I suggest the following simple rules to licensed surveyors to reduce the risk of being found guilty of professional misconduct —

• Wherever possible, get involved before the survey work starts so you can demonstrate that you exercised appropriate direction over it.

• Decide on the level of trust you can reasonably have in the people carrying out the work under your direction. Complete trust in others is risky and seems incompatible with the requirement to provide direction.

• Read the certification. You are not just certifying that the dataset has been properly prepared. You are also certifying that all of the survey itself is correct – including field work.

• Document the instructions, orders, expectations and directions that you set for other staff for the conduct of the survey.

• For any survey that you certify, be able to show that your level of direction was reasonable in the circumstances.

• Permanently retain all documentation of the direction that you exercised. Note that survey mistakes often do not arise for decades, and giving up your licence does not release you from your responsibility for the accuracy of your surveys.

New standards for datums and projections

and Information New Zealand has recently published a series of standards that formally define the New Zealand Geodetic Datum 2000 (NZGD2000), Ross Sea Region Geodetic Datum 2000 (RSRGD2000) and a number of projections in terms of them.

The standard for NZGD2000 projections defines projections for topographic mapping in New Zealand (New Zealand Transverse Mercator 2000) and its offshore islands, the continental shelf and the meridional circuits used for cadastral surveying. This standard was amended in July 2008 to correct a number of errors in the transformation equations.

Four fact sheets have also been published to further explain —

• NZGD2000, the official geodetic datum for New Zealand

• RSRGD2000, the official geodetic datum for the Ross Sea Region of Antarctica

• The official mapping projections in terms of NZGD2000

• How to convert coordinates between different datums and projections

The fact sheets consolidate a selection of the information about current and historic datums and projections used in New Zealand that is available on the LINZ website www.linz.govt.nz/geodetic/index.aspx. The standards and fact sheets can be downloaded from the website. For more information contact LINZ at info@linz.govt.nz or 0800 ONLINE (0800 665 463)