Weather to Claim

Insurer's position concerning insurance claims involving damage from natural hazards under household and commercial policies

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PREFACE

Being a keen weather enthusiast and having spent all of my working life within the insurance profession, where I have encountered some strange decisions concerning weather related claims, I considered that some benefit would be derived from producing a booklet relating to the subject.

I must express my thanks to the Directors of my current employer, Stuart Neal Chartered Loss Adjusters, Iain Macgregor and Derek Cummings for their input, Roy Foulsham, now retired and tragically blind, but a Chartered Engineer and Chartered Building Surveyor, for his assistance insofar as buildings claims are concerned and Ian Currie of Frosted Earth for his technical input on weather aspects.

STORM

The vast majority of weather related insurance claims relate to loss or damage as a result of storm or tempest. The latter can be clearly defined as being exceptional storms, such as those which affected the UK on 16th October 1987 (the famous "non-hurricane" of Michael Fish) and 25th January 1990 (the Burns Day storm). However, the definition of Storm has been modified over the years leading to some confusion.

It was initially defined in *Oddy v Phoenix Assurance Company Ltd 1966* , a case heard at Cornwall Assizes relating to a retaining wall which collapsed onto the plaintiff's bungalow. The facts were that the insured had purchased a plot of land surrounded by a 12 feet high retaining wall. In 1961, cracks had appeared in the wall and the householder then purchased a buildings insurance policy covering the bungalow, which had just been erected, against various perils including loss or damage by storm or tempest, but excluding flood, subsidence or landslip. In early November 1963, there had been heavy rain and high winds, but no damage occurred. However, by 19th November the wind had dropped and the rain ceased by 11am, but at 1.40pm the top of the wall collapsed and shortly, afterwards the whole wall collapsed onto the bungalow Following consideration of the evidence (which included that of a builder, a Mr Crapp from Looe, who confirmed that the wall had previously been damaged and was in a poor state of repair) the judge concluded that " a storm means storm and to me it connotes some sort of violent wind usually accompanied by rain, hail or snow. It does not mean persistent bad weather, nor does it mean heavy rain or persistent rain by itself. I do not think that any violent wind caused any part of this wall to fall. It fell for the reasons stated and finally because of the build-up of pressure from the percolation of water through the cracks". He went on to say that had it been necessary to make any ruling on the point he would have held that the fall was a landslip, which he defined as "A rapid downward movement under the influence of gravity of a mass of rock or earth on a slope.

The next case involving storm was *S&M Hotels Ltd v Legal and General Assurance Society Ltd (1972)* which related to a hotel building which collapsed during the course of conversion work in 1968 and a claim was submitted under the storm peril for the damage sustained. It was held that the building collapsed for some reason, but not because a storm was the concurrent or contributing or proximate cause of the damage. The judge did however express some thoughts on the meaning of Storm which he considered must be something more prolonged and widespread than a gust of wind. "One swallow does not make a summer and one may have a gust without a storm although during a storm there will almost certainly be gusts".

He approached the question "was there a storm in the period leading up to the collapse?", by imagining himself in the place in question at the material time and trying to reconstruct what he would have observed from the evidence provided, especially from the meteorological records as interpreted as well as witness statements.

In *Glasgow Training Group (Motor Trade) Ltd v Lombard\ Continental plc (1982),* of which more anon, the Judge referred to the definition of storm in the Shorter Oxford Dictionary in which it is defined as "a violent disturbance of the atmosphere manifested by high winds often accompanied by heavy falls of rain, hail or snow, by thunder and lightning and at sea by turbulence of the waves; hence sometimes applied to a heavy fall of rain, hail or snow or to a violent outbreak of thunder and lightning".

Finally, in *William Nimmo & Co Ltd v Russell Construction (1995),* damage occurred during conditions of torrential rain which had been preceded by winds of around 31/32 knots but gusting to 41.2 knots, which were held to constitute a storm by an expert witness from the Meteorological Office. The damage was to the roofing underfelt on a building where the tiling had been stripped off for renewal, thus making it more susceptible to the effects of wind, hence the low wind speed involved.

STORM – WHAT IS IT?

In a paper published by the Building Research Establishment in the 1990's it was stated that buildings in Britain had to be designed to withstand gust wind speeds which range from 85mph in Southern Britain to over 120mph

in the far North of Scotland. This contrasts with research undertaken following widespread storms in Sheffield in February 1962, when it was found that damage to roofs occurred at gust speeds as low as 40 mph. That particular storm affected almost two-thirds of the city's entire housing stock, with one hundred completely destroyed, including a number of "pre-fabs". Clearly, there have been improvements in construction and maintenance standards over the past fifty years and the speeds at which one can reasonably expect a building in a reasonable state of repair to sustain storm damage are now much higher that they were in 1962.

Reference to the Beaufort Scale for land use (See table on Page 32), indicates that slight structural damage (chimney pots and slates removed) occurs at a mean speed of 47-54 mph (Force 9 – Strong Gale).

Damage occurs during gusts, which are much higher than the mean wind speed. A typical ratio of gust speed to average (or mean) wind speed is approximately 1.7, so that in other words a wind of 10 mph will be accompanied by occasional gusts of up to 17 mph.

Applying this ratio to the data for a Strong Gale above implies that gusts could be expected of about 80 mph. This is the most likely scenario inland but on the coast, because the sea surface is relatively smooth, the friction effect will be much less but more constant in character so the gust ratio will be about 1.3 times the average speed, making a gust in a Force 9 wind, 61mph. Given the complications involved in using different ratios in various parts of the country, it is probably best to use this ratio (1.3 times) in considering the gust speed for Storm claims.

The Financial Ombudsman Service has stated that if the policy terms fail to provide a definition of Storm (and most of them don't) they would consider their approach to storm conditions on the basis of their past experience and would reflect upon the factors that need to be present for a claim to be successful, which are that a storm must involve violent winds and would generally be accompanied by rain, hail or snow. It is not enough for there to merely be heavy rain and, similarly, high winds are not sufficient to indicate that there has been a storm.

The Ombudsman has also considered that, where the policyholder asserts that there has been a storm, there are three issues that need to be considered:-

- **Has the policyholder shown, on the balance of probabilities, that storm conditions prevailed on or around the date upon which the damage is alleged to have occurred?**
- **Is the nature of the damage consistent with storm?**
- **Were the storm conditions the prevailing or dominant cause of the damage that has occurred?**

If each question cannot be answered as "YES" then the claim is likely to fail.

On the basis of the foregoing, we can set out a definition of Storm to suit all cases, as follows:-

"Damage occurring to the external envelope of the building as the result of a violence disturbance of the atmosphere manifested by severe winds accompanied by heavy falls of rain, snow or hail or by thunder and lightning"

One problem which can manifest itself during high winds is the loss of rendering from the walls of a house. This does not normally arise from a storm, but rather from general decay and the effects of frost so that unless there is evidence that the storm was "the last straw", such claims can be repudiated.

<u>Flat roofs</u> are the bane of an adjusters' life, for the fact that water enters a property during heavy rain or a thunderstorm suggests to a policyholder that the roof has been damaged by a storm and that the claim should be successful.

The first thing for an adjuster to do in such circumstances is to find out about the roof's history by seeking answers to the following questions:-

1. **How old is the roof covering?**
2. **Has the covering been renewed before?**
3. **For how long has the roof been defective?**
4. **If the roof is leaking, does it leak during or immediately after rainfall? Or a few days later?**

5. **Does water pond on the roof?**
6. **What is the room below used for? (Flat roofs above kitchens, utility rooms or bathrooms are more vulnerable to condensation problems than those above living rooms or garages)**
7. **Is the roof used as a balcony or terrace**
8. **Is the contractor who installed the roof still trading – if not why not?**

If the roof has been repaired in the past in the same place, then that is an indication that the work has been done poorly, while if there is evidence of flowing, rippling, cracking or crazing, this indicates old age particularly where mastic asphalt is concerned. Blisters are an indication of entrapped water or condensation, while excessive deflection or sagging may affect the flow of water off the roof resulting in ponding and additional loading on the structure and is caused by undersized joists, inadequate strutting or blocking, weakening of the joists by decay, wood-boring insect attack, decay or deterioration of the decking or softness between joints. Other potential causes are corroded connections, collapsed or rotted insulation or poor original construction.

Older types of built-up bitumen felt can suffer from splitting due to thermal movement in the deck or insulation below, cracking or crazing due to exposure to sunlight, or mechanical damage from heavy objects on the surface or penetration by ivy.

Perimeter upstands are often poorly protected, with inadequate or non-existent flashings allowing water penetration to occur, while faults in drainage are a frequent problem usually because there is an incorrect fall – it should be between 1 in 40 and 1 in 80.

Condensation is the likely cause of internal damage if damp staining is general on the ceiling or walls or is concentrated in external corners, probably accompanied by mould growth.

Parapet walls are a common source of problems and inspections will often reveal that the walls are cracked, out of plumb or not straight, while some parts may be loose or have detached, with a lack of weathering detail or signs of spalling concrete, rust staining or movement at joints

Coverings to flat roofs are very rarely damaged by high winds, but instead are affected by the problems referred to above although they can be struck and impaled by falling tiles. All but the last of these are outside the

scope of policy cover, but if a tile is dislodged during a storm, then the damage that it causes should be covered by most policies under the Storm peril.

The resultant internal damage to the ceiling and decorations could be accepted by insurers under the Accidental Damage extension to the Buildings policy, assuming that it does not exclude ingress of water and provided that the proximate cause (qv) of the damage is the operation of the storm peril. Flat roofs can be torn off due to their eaves overhang being lifted by wind and the felted surfaces being lifted and torn by aerofoil action.

The adjusters' tasks in such cases is to consider the proximate cause of the damage, which has been defined as "the active and efficient cause that sets in motion a train of events which brings about a result, without the intervention of any force started and working actively from a new and independent source". (Pawsey v Scottish Union and National Insurance Co., 1908).

Retaining walls, such as that in Oddy v Phoenix (qv) are often brought down by the pressure of the saturated, retained earth behind them frequently failing because of the fact that the wall has no weepholes, which are designed to permit the retained water to escape.

If they have weepholes, but these are inadequate or blocked, then the wall could well collapse and the doctrine of proximate cause may come into play in order to determine whether a claim exists under the terms of the policy.

The position is clear from the following table in which the insured event is denoted by◄ and any other peril (excepted or otherwise) by—.

The happening of the insured peril may be	**Where the loss is caused without an excepted peril being involved**	**Where there is an excepted peril involved**
A single cause or the last of a series of causes, ie ◄ or — — — — ◄	Where the single or last cause is the insured peril, there is a valid claim. It is unnecessary to enquire into preceding causes where the peril was not brought into operation by an excepted cause.	The position depends on the policy terms, eg,if the contract excludes loss *directly or indirectly caused by a* certain peril, there is no valid claim where there are preceding causes which include an excepted peril
A concurrent cause — — — — t — — — — — ◄◄◄◄◄◄◄◄◄◄ ————————	The loss is then caused as much by the insured peril, then the others may be disregarded	If the loss is caused by the insured *separated*, there is liability for the latter. If *inseparable* ,then no liability at all
In a direct chain of events ie. consecutive in unbroken sequence: either ◄◄— — — — or ◄— — —	Where each cause in the sequence is the reasonable and probable consequence directly and naturally resulting from the preceding cause, the insured peril is the cause of the loss (The cause proximate in efficiency, but not necessarily in time)	If the excepted peril precedes the happening of the insured peril, the latter being the reasonable and and probable consequence directly and naturally resulting from the excepted peril, there is no claim. If the insured peril is followed by an excepted peril, the latter being merely a link in the chain of causation so that it is a reasonable and probable consequence of the former, a valid claim arises.
In an interrupted chain of events, ie, consecutive in broken sequence: either —‖ ◄‖ — — or ◄‖ —‖ —‖ — —	If there is a new and independent cause *(novus actus interveniens)*, then it is *not* the reasonable and probable consequence directly and naturally resulting from the preceding cause. If the new cause is an insured peril, there is liability, but there is no liability for loss or damage *by the preceding or subsequent causes* when the sequence is broken	If the excepted peril is followed by the happening of the insured peril as a a new and independent cause, there is a valid claim therefor. If the insured peril is followed by the happening of an excepted peril as a new and independent cause, there is a a claim excluding loss or damage caused by the excepted peril.

WEIGHT OF SNOW

Earlier, I mentioned *Glasgow Training Group (Motor Trade) Ltd v Lombard Continental Plc (1989)*, the circumstances of which were that, over a period of two days snow slowly accumulated to a total depth of 8 inches on a flat roof which resulted in its' collapse. The winds were no more than Force 5 on the Beaufort Scale, but the Judge decided that the conditions constituted storm within the meaning of the insurance policy and that is a

person of average common sense described the conditions as a storm then there had been one. The conditions did not constitute a storm within any of the cases mentioned above and could have prevailed on any day of the year, while the amount of snow involved was infrequent but not unusual.

It was a decision that strongly upset the expert witness for Lombard, the late Arthur Blackham of Noble Denton, who mentioned it whenever he saw me at Royal Meteorological Society events from then on and he considered that the judge's decision was somewhat perverse.

In the end, in order to give policyholders cover without dispute, the Storm peril was extended to include "weight of snow". Unfortunately for insurers this extension to cover could be "a licence to print money" for there are many situations in which it will not be possible to measure the depth of the snow, while if allowed to remain in situ for several days it can become self-compacted and the lower part of the lying snow can turn to ice -due to thawing and refreezing- when against a warmer substrate such as the roof of an underlying habitable room, with the ice being many times heavier than the equivalent thickness of snow. Certainly, the structure should be capable of withstanding the weight imposed unless the roof is exhibiting signs of deterioration to its structure.

My own view is that insurers expect there to have been a present or imminent danger of collapse of the roof due to the weight of snow for this peril to operate.

To consider such cases, the insurer will need to know the type, construction and age of the roof, its maintenance history, the depth of the snow, how long it had lain on the roof, the minimum temperature experienced over the period and the nature and extent of the damage sustained.

In severe wintry weather, claims for damage caused during snowy conditions frequently arise, but most are attributable to water penetration caused by thermal movement affecting the lead flashings, which contract in very cold weather creating cracks which enable water penetration to

occur. Whilst the resultant water damage might be considered by insurers if the policy includes accidental damage cover, the repairs to the flashings fall outside the scope of policy cover. The same situation arises in summer, when the flashings can expand with the heat.

One other type of incident that would fall for consideration under the "weight of snow" peril is AVALANCHE, which one might be forgiven for thinking would only occur in the UK in Scotland. In fact, there have been at least three instances of damage to property property and/ or death caused by avalanches in England and Wales, two of which occurred in upland areas, but the most serious and significant occurred on the South Downs at Lewes, East Sussex on 27th December 1836.

Snow had started falling over on Christmas Eve and there was a furious blizzard on Christmas Day, with these conditions continuing into Boxing Day resulting in snowdrifts up to 15m (50ft) high, cutting the town off completely. A particularly menacing snowdrift built up on the cliff to the east of the town and formed a hanging shelf of snow towering over a row of terraced cottages below. When cracks appeared in the snow overhang the residents below were urged to evacuate their homes but most ignored the warning thinking it was a joke. The snow toppled on the brink and slid down the hill with tremendous force completely burying the seven end houses. 9 people died as a result of either suffocation or being crushed under the weight of snow, but there were six survivors.

The site is marked by a public house bearing the name "The Snowdrop Inn"

LIGHTNING

Firstly, a plea to you all to ensure that the word is spelled correctly and not as in the opposite to "darkening", with an extra "en" in the middle!

When lightning strikes, radial currents spread out from the location of the strike and, in the case of buildings, may result in current passing through metal pipes and electrical wiring, which can mean that someone touching a radiator, light switch or telephone can receive a shock and, in the case of numerous items being plugged in to an electrical circuit, all of the devices concerned can blow unless they are earthed, resulting in expensive claims for damage to electrical equipment and in some cases fire damage to the building itself. Television aerials are not effective lightning conductors and church spires can be similarly ineffective. This was the case in a lightning claim which occurred during a thunderstorm at Leigh Park, near Havant, Hampshire in June 2001 and which resulted in the Church being destroyed by fire.

In 1993, I dealt with a claim at Salfords in Surrey, where the policyholder was just about to sit down to watch the European Cup Final on television, when there was a loud bang and the electrical supply went "dead". On venturing outside, he found that a large tree that grew in the front garden had suddenly shrunk in size and that large chunks of it were on the roof of his bungalow – the tree had been struck by lightning and "exploded" causing extensive damage to the roof tiling.

HAIL

There are three phenomena that could loosely be described as hail. In the first, the precipitation particles are beautifully white but can be easily crushed between the fingers – these are snow pellets. The second consists of particles of quite moderate size, composed of clear ice and sometimes conical in shape – these are ice pellets. True hail is whitish in appearance and varies greatly in size – true hail. If you cut through a hailstone you may notice a layered structure showing that the hailstone has grown through a series of stages.

Large hailstones fall from a deep cumulonimbus cloud, much of which will be composed of supercooled water droplets. As the hailstone falls it will collect tiny water droplets which flow around its surface before freezing. If no air is trapped this frozen water will form a layer of clear ice. The hailstone may then get caught in a vigorous updraught and as it is carried upward it will collect more minute water or ice particles but this time some warm air will be trapped during the process and an opaque layer is formed. Thus layers build up on the hailstone and the cycle may be repeated until finally the stone is so big that it falls to earth. Unlike raindrops which have an upper size limit beyond which they can break up under air resistance, there is no such aerodynamic limit for hail as a result of which they can grow large enough to dent cars, shatter greenhouses and injure people.

The largest hailstones to fall in the United Kingdom fell at Horsham, West Sussex on 5th September 1958, measured 80mm in diameter and weighed 190g which is greater than a cricket ball. The storm destroyed buildings and orchards as well as damaging aircraft at nearby Gatwick Airport while lawns were left pitted along this part of the south.

Hail can cause extensive damage to crops (it is a specific peril in agricultural policies) and can also damage flat roofs and Perspex roof panels, as well as cars.

FALLING TREES

High winds can cause healthy trees to blow down or to have branches blown from them – this was the cause of much damage during the Great Storm on 15/16th October 1987 but diseased trees, especially those suffering from Honey Fungus, can be damaged at lower wind speeds and can also be affected during periods of drought when the dry condition of the soil can limit make it difficult for the roots to hold the tree upright.

Extreme heat can cause trees or their branches to fall by bringing about stress to the tree as happened during the very hot and dry summer weather in 2003, culminating in the hottest day on record on 10th August of that year.

Remember that the policy will generally not pay for the removal of the tree or any branches unless it is necessary to clear building debris buried under the remains of the tree as it fell.

It would seem from case law, that if a branch or tree falls as a result of cracking or disease that would either not have been visible on careful or casual inspection, the owner is not liable for any injury or damage sustained (*McLellan v Forestry Commission (2005) Q.B.D. (TTC) Bristol unreported; Corker v Wilson (2006) unreported),* but if the tree had not been inspected the owner would be liable *(Caminer v Northern & London Investment Trust Ltd (1951) A.C.88).* These are useful cases to bear in mind when recoveries are being considered.

The writer can recall a claim which arose during the Burns' Day Storm when the bifurcated trunk of a 60 ft tall mature beech tree growing on public land split, one limb of the trunk from the other close to the base bifurcation, with the massive trunk being uprooted and toppling due to the loss of stability. It was demonstrated that the decay in the crutch of the bifurcation close to ground level

could, and indeed should, have been observed many years before had there been regular inspection of the tree and a successful claim was made against the Council concerned.

FLOOD

The generally accepted definition of the term has been "flooding or inundation of areas not normally underwater by the escape of water from the normal confines of any natural or artificial water course (other than water tanks, apparatus or pipes) or lake, reservoir, canal or dam. Inundation from the sea is also included. However, following the decisions in *Computer and Systems Engineering Plc v John Lelliot (London) Ltd & Another (1980)* and *Rohan Investments v Cunningham,1998,* neither of which related to water escaping from rivers or similar sources indicate that the definition which will be considered by the Courts is now much wider.

Indeed, in the first of these two cases the definition was revised to the following:

"An invasion from outside the property by a large volume of water caused by a rapid accumulation from an outside source such as an unusually heavy downpour of rain."

This now becomes the standard definition of FLOOD.

A rising water table can result in the penetration of water into basements and cellars which are not properly tanked. The leading case on the subject is *Young v Sun Alliance & London Insurance Co Ltd (1978)* which involved gradual seepage into and the flooding of, a room resulting from the natural diversion of an underground water course. The insured maintained that Insurers were responsible for the cost of repairing the underground floor and walls together with the cost of having them re-tanked. It was the conclusion of the Courts that even though the water

came from a natural water course, it was not caused by flood which meant a large and temporary movement of water. On appeal, it was further held that the word flood was used in the policy in the sense of having an element of violence and suddenness, whilst it was the essence of a flood that there was some abnormal situation and that seepage of water was not violent or abnormal.

Contrast this however, with the decision in *Rohan Investments v Cunningham (1998),* where water entered the property following 0.50 inches of rain as a result of problem with roof drainage which may have become blocked, causing water to lie in the property to a depth of 3 to 4 inches.

The Court of Appeal gave a very short judgment which concluded that a flood could arise from an accumulation of water which was not in absolute terms large but it was necessary to consider the size of the premises. The accumulation did not have to be rapid to be abnormal but there was no basis for confining a flood to ingress of water originating from a natural phenomenon. It had to be looked at from the point of view of a householder and, as far as the insured was concerned, the fact that a blocked outlet caused the ingress did not prevent that ingress from being a flood.

Such claims were all too familiar in the Autumn of 2000, when for example on the 15th September heavy rainfall in Southsea and this, coupled with the local pumping station being out of action for maintenance, resulted in flooding to a large number of properties, while just over a month later, Lewes and large areas of the country were similarly affected to a depth of well over 150mm. Some of the losses involved water overflowing from water courses, but others related to water escaping from drainage pipes that could not cope with the volume of water involved.

The fact that the Rohan Investments case involved roof drainage means that if rainwater collects within the building and could be termed "a flood", then the claim for damage falls under the flood peril and the same arises where a road gulley cannot cope with the volume of rain, resulting in a manhole cover being blown off, or a drain backsurging and water entering the premises.

Basements can cause problems when they become flooded for they should be "tanked" (ie provided with some impervious membrane to prevent dampness getting in). The writer can recall one claim, where on stripping back the soggy, brown wallpaper it revealed that it had not been affixed to a plastered wall but merely stiff London Clay. Many cellars were either designed for the storage of things that did not need to be kept dry or were in fact designed to flood and have since been altered to be used as bedrooms or for storage purposes.

What is insurers' position in respect of the flooding of basements? Provided that the basement is properly tanked, and that water penetration into the basement does not occur every winter, with the event being a "one-off" and thus constituting "flood" within the definition referred to earlier, insurers should pick up claims for internal damage both to decorations and contents. Generally speaking, if the tanking has been properly installed, it should be capable of withstanding the hydrostatic pressure exerted by a one-off event. Failure is likely to be due to the cumulative effect of the high water table breaking down the tanking material or poor workmanship involved in its installation, or to the failure of the submersible pump that is often installed in such situations.

It should be noted that policies now exclude losses directly arising from an increase in the level of the water table

One final aspect to consider is that of recovery of insurers' outlay in cases where culverts have failed to take away the water that has been discharged into them.

In *Bybrook Barn Garden Centre v Kent County Council (The Times 5th January 2001)* which went to the Court of Appeal, the claimants' garden centre was flooded in such circumstances. The Defendants were successors of the Authority which built the culvert. It was not a nuisance when constructed and was not expected to become a nuisance. However, as the area developed, the culver became inadequate in times of heavy rain. It was held that the Defendants as Highway Authority were liable. They did not have a strict liability to abate the nuisance but they had a duty to take reasonable action. To widen the culvert would have cost money, but would have been a relatively simple solution and they should have done it.

FROST

The only aspect of frost damage that is covered under a material damage policy is damage caused by the escape of water from pipes or other water apparatus as a result of bursting due to freezing, while cover is often provided under household policies in respect of the repairs necessary to the plumbing as a result of frost causing the burst.

Energy conservation measures have required roof spaces to be insulated to minimise heat loss, but the effect of this has been to create a roof space which has a temperature not very different from that of the outside air and, even with the water apparatus being lagged, pipes can still freeze if the temperature drops low enough.

Temperatures of less than -5C which persist for more than 24 hours freeze unprotected water pipes and temperatures of -10C those that are lagged. It is therefore essential that pipes are lagged and that in extreme conditions heat is allowed to enter the roof space, either by means of a heater placed directly below the open hatch, or by means of a suitable heater placed in the loft itself (indeed some modern houses have one built in for this purpose). In the case of heaters within the loft space, the risk of fire needs to be carefully considered so such heaters must be kept away from any items stored in the loft.

The majority of claims for escape of water due to frost arise when the insured is away at a time when freezing conditions exist and, to save money, the decision is taken to either turn off the central heating or to maintain it at a very low temperature, which is insufficient for the system to function effectively if the temperature falls dramatically outside.

What then can be done to reduce the risks involved? There are three main rules:-

1. **Maintain the central heating at a temperature of 21C and run it for at four hours each morning and evening as well as for a couple of hours in the middle of the night.**
2. **Flush the toilet and run a tap each day for a brief period.**

3 Open the loft hatch to allow heat to get into the roof space, making sure that in doing so condensation does not arise in the roof space.

Such weather conditions arose in December 2010 causing widespread damage to properties and the writer dealt with a number of cases involving properties which had been let to tenants whose attitude seemed generally to be to turn off the heating when going away, ignoring the consequences of their actions. Other cases involved properties where the owner occupier had gone into a care home or who had passed away and those left behind had decided to keep the heating on but unforunately at far too low a temperature for it to have any effect. Following the advice given in the previous paragraph would probably have saved the day.

Most policies include conditions which apply when the property is unoccupied and the wording must be carefully scrutinised before the adjuster attends in order that the terms can be checked for compliance.

In May 2011, I received a claim for damage to a "solar panel" which had been damaged during the very cold weather in December 2010. Reference to the weather conditions revealed that at Yeovil, where this incident occurred, the minimum temperature was below zero for a number of nights with the lowest minimum being minus 9.3C .

There are two types of solar panel, the photovoltaic cell and the solar panel collector. The former are designed to withstand heat, cold, rain and hail for many years and I have not dealt with any weather related claims for them, but the latter consist either of plastic flat plates or vacuum tube collectors which are filled with a mixture of water and propylene glycol which is used as heat change fluid to protect against frost. However, in the weather conditions experienced in December 2010, the plastic pipes split resulting in an escape of water, meaning that the hot water heating system failed.

Given that the solar collector was part of the water apparatus for the house – it was linked to a water cylinder located in the roof space – the loss fell for consideration by the insurers concerned.

Frost and snow create slippery road conditions and the duty of the Highway Authority to clear it was considered in *Goodes v East Sussex CC,*

***2000 (The Times, 16th June 2000)*. In this case, the Highway Authority had a good warning system and dispatched gritters on the morning in question, but they had not arrived by the time the accident involving the plaintiff occurred. It was held that the Duty owed under the Highways Act, 1980 and earlier statutes had not included clearance of snow and ice and therefore the case was dismissed. This would be worth bearing in mind in the event of an impact damage claim arising in such circumstances and the question of recovery needing to be addressed.**

SUBSIDENCE, HEAVE, LANDSLIP AND HEAT

Subsidence is defined as "the downward movement of a site on which buildings stand from causes unconnected with loading from that building."

One of the major causes is clay shrinkage as a result of a period of dry weather, often exacerbated by the leeching effect of tree roots, which results in cracking occurring to walls and ceilings. Subsidence is a peril that was added to policies in the 1970's and claims are best dealt with by a loss adjuster with building surveying expertise.

Cracking does not necessarily arise from subsidence, but can be brought about as a result of thermal movement, although in such cases the cracks are generally straight and of even width. One of the areas frequently affected by such cracking is the ceiling where cracks can occur at wall and ceiling junctions. Such damage is outside the scope of cover provided under the terms of the Accidental damage to Buildings peril.

The numbers of subsidence claims varies dependent, it would appear, on the weather conditions experienced during July/ August/ September each year.

If the weather conditions are dry and perhaps hot in areas where the soil is clay-based, during most, or all of this period, there will be a surge in the number of subsidence claims presented to insurers.

Sometimes, subsidence damage can be sudden and dramatic. I can recall a claim that I dealt with in North London in 1989 which I visited in company with the insured's surveyor who had attended for the first time a couple of days earlier. At the time of my meeting, he handed me the schedule of damage that he had compiled following this earlier visit and we walked around the house checking that it was accurate. In almost every room the cracks to the walls had widened and multiplied in number, with one crack having been heard forming by the occupants as they sat watching television the previous evening, but the biggest shock for him was when we went into the back garden to inspect the rear elevation, which he assured me was undamaged when he looked at it days earlier.

There were cracks more than one inch in width and we had to make urgent arrangements for the rear of the house to be shored up. The problem had been caused by the dry weather that summer, coupled with the leeching effect of a large tree growing in the garden about 20 feet from the rear elevation.
Heave is the reverse of subsidence and can arise as a result of an increase in the water table on a clay subsoil. It can also be experienced on sub-soils consisting of fissured chalk, which can expand in frost conditions.

Landslip was, as mentioned earlier, defined in *Oddy v Phoenix Assurance Ltd 1965* as "a rapid downward movement under the influence of gravity of a mass of rock or earth on a slope."

Heat can result in the temperature in the roof space rising to a figure of more than 100F, which can result in plastic water supply pipes springing apart at the joints causing water to cascade down through the house. Summer heat can cause other problems, some of them more unexpected. On 3rd August 1990, the temperature reached 36C and I dealt with one claim where the insured came home from work in the early afternoon and opened the sliding patio door to the lounge, which faced south. She received a shock when the double glazed door fell from its track and landed on the patio, smashing the glass. The door was of UPVC construction and the day in question was the hottest of the century. I noticed that the door track had distorted and it was clear that this had been caused by the heat so that when the door was pulled it had simply fallen out of its track. All insurers could do, under the terms of the policy, was to pay for the re-glazing of the doors.

Another claim that I dealt with was on 14th August 2003 for a fallen lath and plaster ceiling on a staircase, which had a large fixed glass light and it was clear that the heat generated by the sun, in a period when the highest temperature in Britain occurred (on 10th August, when 37.9C was recorded at Brogdale, Kent about 5 miles away from this particular claim) had built up on the enclosed staircase and caused the lath and plaster to dry out and crumble. This had to be excluded under the terms of the accidental damage to buildings peril.

MISCELLANEOUS

There are a number of weather related defects which are not covered under insurance policies such as:
Rain, which can penetrate porous materials with expansion and contraction breaking the surface
Wind, if not of such severity as to constitute storm can nevertheless loosen materials such as cement fillets
Frost causes moisture within saturated materials to freeze and expand
Sunlight assist the drying-out process, but rapid drying may cause too rapid a shrinkage at the material surface. This may affect the structure, the colour of the finish of the material
Other non-porous materials may be affected by sunlight in different ways. A material may soften, melt or expand, processes which must be guarded against or allowed for. Examples include double glazed windows, plastic guttering or fascias.

The durability of organic materials such as paints, plastics, asphalt, felt etc is also affected by sunlight due to the removal of natural oils. This may cause drying out, brittleness, breakdown of surface coatings or the bleeding of coloured pigments which then appear to have faded or discoloured.
The water soluble salts in clays are mainly sulphates which, in moist conditions, dissolve to form solutions which are absorbed into materials by capillary action and travel towards the surface where the moisture evaporates leaving concentrations of drying salts. On the surface, this is efflorescence but beneath the surface is cryptoflorescence. Expansion of such materials can exert pressure that may cause surface erosion.

Ivy, mosses and lichens can cause deterioration of material surface and jointing.

Lead, especially flashings, are subject to thermal movement, cracking and curling and creep which are exhibited when, due to its own weight, it is unable to return to its original position on cooling/warming.
Chemical reactions can bring about corrosion by oxidation or electrolytic action as well as sulphate attack.

Atmospheric pollution can create acid rain causing deterioration of components of both stone and metal.
These problems can bring about damage which only tends to manifest itself following periods of heavy rainfall and high winds. For example, loss of rendering (moisture penetration/frost), leaking flat roofs (sunlight/moisture/chemical reaction/biological effects), failure of lead flashings(thermal movement/creep/biological effects/atmospheric pollution), slippage of roof tiles/slates(chemical/biological/atmospheric pollution) and leaning chimneys (chemical reaction).

These are matters that fall outside the scope of cover, but the Ombudsman has stated that normally it would expect an insurer to make some payment if the damaged item which has previously shown no sign of being defective fails in conditions that constitute a claim within one of the insured perils.

In this country, a storm can be quickly followed by another and the question of multiple application of the policy excess may need to be considered.

In such cases, the insurer needs to pose the question

"Would it have been possible for the repairs that were needed following the initial storm to have been completed prior to the second storm taking place?"

If the answer is "no" then only one excess should be deducted.

EARTHQUAKE

Earthquakes occur more frequently in this country than one might expect. Indeed, there are usually 20 to 30 per year, although very few cause any significant damage.

The 1931 earthquake which was centred off the Dogger Bank in the North Sea did cause damage on land and in 1884 one occurred in Colchester, resulting in damage to about 1,200 buildings.

The most significant earthquake in more recent times was at Folkestone, Kent on 28th April 2007. It measured 4.3 on the Richter Scale and 6 on the European Macroseismic Scale. This caused widespread damage mostly in the form of cracking to the fabric of buildings and dislodged/loosened some chimney stacks, but unlike those that has occurred in the past in this country or elsewhere in the world, the damage did not cause buildings to collapse and thus it was difficult to determine whether the damage had been solely brought about as a result of the earthquake or whether it had been caused, or contributed to, by lack of maintenance or thermal movement. A rough guide was to examine cracks to determine whether they appeared to have been very recent in origin, but of course some cracks may have been in existence beforehand and increased in length and/or width by the earthquake.

The generally accepted approach was to treat each claim as being due to the earthquake unless there was clear evidence that wear and tear, lack of maintenance or some other cause was to blame.

DEALING WITH THE DAMAGE

Much depends upon what has happened, but the first step is to undertake a close inspection of the building, both internally and externally, remembering that whatever has caused the damage might be repeated a few days later.

Have roof tiles/slates been dislodged or has water got into the building? Take photographs to illustrate the damage and then get tarpaulins fitted to the roof to prevent further bad weather penetrating the structure. If water has got in, has it reached the level of the power circuits – if so, turn off the power and contact an electrician to check that the circuits are safe and, if not, to get them dried, made safe and repaired. The policyholder should also deal with the gas and water supplies in the same way.

Having surveyed the damage, the policy holder should contact their insurance company and explain to them what has happened and what the nature and extent of the damage is, as well as reaching a decision as to whether the house is inhabitable. The insurance company should guide the policyholder from this point onwards.

The first thing that needs to be considered is the source of the water – is it clean (from a water pipe), grey (from surface drains or washing machines etc) or black (from an external source such as sewage)

Water must be drained away from the house, remembering that it can collect in nooks and crannies below ground or basement floors, before cleaning and drying works can commence. Loose floor coverings and carpets may need to be carefully lifted, along with some of the floorboards near to walls, with wallpaper (especially heavy vinyls) stripped off and moist plaster may need to be hacked off to assist drying, before dehumidifiers are installed and the central heating switched on. Remember that drying equipment is

very thirsty in terms of electricity usage and meter readings should be taken at the outset as the cost of the power used can be claimed under the policy.

Loft insulation will need to be removed if it has been affected and it must be remembered that wood suffers dimensional change very quickly so that extreme care is needed when the humidity level is reduced so that this needs to be done slowly to enable the moisture within the wood to adjust to that of its surroundings. If it changes quickly, the wood will soak up free water and will suffer if the humidity remains high for any length of time.

Dense materials, such, as engineering bricks, concrete and some plaster, take a long time to dry and it may be necessary to hack of plaster to a height of about 1 metre above floor level.

The drying of concrete slabs when covered by thermoplastic floor tiles can be a problem and it is necessary to check whether the source of the flood was ever likely to have caused damage beneath the thermoplastic tiles. Location, volume of water, dwell time, the presence or otherwise of a vapour barrier and pre-existing building conditions have to be investigated in order to reach a conclusion. The general rule in such cases is to replace those floor tiles that have become unbounded from the floor.

A major set-back in the restoration process is the time taken to dry out buildings prior to starting remedial building work. There are potentially hundreds of litres of water that remain hidden within the building's structure. As a result, buildings can remain unfit for use or occupation for many months during which time high internal humidity levels can cause secondary damage and increase the risk of dangerous mould growths.

Whilst the drying rate of a material will vary according to its porosity and density, it is also determined by the ability of moisture to evaporate into the surrounding air. Drying rates are greatly improved by lowering relative humidity, adding heat and increasing air movement.

Ideal drying conditions of 35 to 55% relative humidity (RH) can only be maintained if the dehumidifier capacity is greater than the rate at which moisture is being evaporated.

When dehumidifiers are used it is imperative that the building is effectively sealed by closing windows, extractors, vents etc. If this causes the internal relative humidity to rise uncontrollably (for example, condensation on external walls) it is clear that the dehumidifier is far too small.

There are two types of dehumidifier in use – refrigeration and desiccant.

The primary benefit of a refrigeration type dehumidifier is that it performs well when used in a warm humid environment. Moisture extraction rates will deteriorate rapidly as both temperature and humidity is reduced. It is generally accepted that refrigerant dehumidifiers should not be used when the dew point is below 10C.

A desiccant dehumidifier operates on a totally different principle to a refrigerant type. The main benefit is that it performs exceptionally well when used in cooler climates, or when lower dew points are required. As there is no water produced during the drying process, these units work effectively at sub-zero temperatures.

Air leaving a desiccant dehumidifier is warm, very dry and at high velocity, thereby providing the three essential ingredients necessary for fast and effective drying. The dry air can be easily ducted to where drying is needed most, whether it is under a floor, into a wall cavity or simply distributed to serve multiple areas.

In summer, particularly during the day, drying is best achieved by introducing as much warm, fresh air as possible using fans to blow air across damp surfaces to speed up evaporation rates. This method is simple and cost effective. Heating or dehumidification should not be used during this time.

In winter, although the outside RH is high, because it is also cold the air actually contains very little moisture. Effective drying can be achieved using a combination of heating (18C – 20C) and air circulation; the internal RH can be reduced by increasing fresh air ventilation.

At other times, when the outside air is cool and humid, it is necessary to maintain an internal temperature of 20C to 23C and to ensure that there is sufficient ventilation to prevent the RH rising above 65% OR to use a commercial dehumidifier, but not both.

The number of dehumidifiers required will, as a rule of thumb, depend on the property size as well as the existence of available heating within the property which can be used to supplement their use.

Once drying out has been completed, a schedule of repairs can be compiled and estimates obtained from reputable local contractors for the works that are required before repairs can be put in hand.

The various flood-damaged areas of the property and the ideal repair solutions depending on the degree of damaged sustained as a result of flood occurring within the property can be summarised as follows:-

ITEM **REPAIR STRATEGY**

Vinyl floor tiles	**Replace**
Vinyl sheet flooring	**Replace**
Quarry-tiled flooring	**Clean in situ**
Solid concrete floor	**Clean and allow to dry**
Suspended chipboard floor	**Replace chipboard and any warped and rotten timber components**
Suspended timber (chipboard) floor with tongued and grooved floorboards	**Remove and replace all timber components (joists, if damaged beyond repair, floorboards,skirting etc)**
Joists	**Seal the floor void, blow in hot, dry air to dry and treat timbers with preservative**
External wall brickwork with cement mortar joints	**Clean**
External wall rendered/pebbledash finish	**Clean**
Internal wall painted/ papered	**Paint/paper**
Internal wall – ceramic tiled/ wood veneered	**Replace tiles/wood veneer**
Internal wall with gypsum plaster	**Replaster**

finish	
Internal block wall with cement/ sand mix and 1mm skim	**Clean the plaster**
Internal block wall with lime/ox hair mix and a lime putty finish	**Replaster**
Internal timber partition wall	**Replace all plasterboard**
Internal metal-framed partition wall	**Replace metal components and plasterboard**
Softwood front door	**Replace**
Double glazed hardwood patio	**Dry, assess damage and replace glazing units if seals have perished**
Hollow cellular type infill door	**Replace**
UPVC Door	**Clean**
Wooden window frames	**Allow to dry, then assess damage and replace glazing units if seals have perished**
Steel radiators	**Dry, clean/sanitise/repaint**
Gas fired heater	**Replace**
Gas meter	**Refer to gas supplier**
Wall-hung gas/electric fire	**Replace**
Electrical circuits	**Replace the installation**

Timber skirtings	**Replace**
Timber Staircase	**Replace timber components that have been in contact with floodwater**
Built-in wall cupboards	**Replace those affected**
Fitted kitchen submerged above plinth level	**Replace the damaged units**

The whole process can take some time to complete so the watchword is "PATIENCE", but don't allow things to become unnecessarily protracted.

ALTERNATIVE ACCOMMODATION

If domestic premises become uninhabitable as a result of the operation of an insured peril, the policy holder is entitled to alternative accommodation of a comparable standard. Remember that the operative word is "uninhabitable" and not merely uncomfortable for living before cover is operable.

In considering the position the insurer can sometimes be placed between a rock and a hard place, for much will depend upon the length of time that the policy holder will be affected.

Hotel accommodation should be avoided if at all possible, except for short-term accommodation, owing to the expense that will be incurred, whilst renting of a flat or house will normally be subject to an assured short-hold tenancy agreement with a minimum rental period of 6 months, which often far exceeds the period actually required by the policyholder for the property to become inhabitable again.

The policy wording must be checked for some policies cover alternative accommodation while others cover additional living expenses, while cover will also be subject to a monetary limit.

Alternative accommodation cover covers the cost of accommodation for the policyholder and his family, but if for example, they were staying in hotel accommodation, it would not cover the meals. If however, cover is provided in respect of additional living expenses it would include the additional meal charges after allowance has been made for normal expenditure incurred by the household on food when living at home. Savings in normal expenditure (for example gas, electricity and community charge bills – if a rebate is granted) should be taken into account

If the policyholder is a building owner with a tenant, the policy may be expected to cover loss of rent, but on occasions the period claimed can be shown to be excessive and it should be pointed out that cover only applies whilst the property is actually uninhabitable. Once building repairs have been completed, there is nothing to stop the owner from seeking a new tenants and it is at that point that liability for loss of rent ceases. If it takes the policyholder time to find the right tenant, that is his problem, not that of his insurers. Each case has to be decided on its merits and it may be possible for the policyholder to purchase a mobile home and place it on his property for the duration of the repairs selling it at the end of the repairs with the insurer obtaining the proceeds of the sale; there are also companies that can rent mobile homes or caravans for the insured to reside in on site during the period of the repair contract, which can have advantages as the insured can keep an eye on progress of the work and make sure that it is proceeding satisfactorily.

The question often arises as to whether cover is provided in respect of accommodation for the policyholder's pets while the property is

uninhabitable. Some policies do provide such cover and the policy wording needs to be checked in each case.

THE BEAUFORT SCALE FOR LAND USE

FORCE	DESCRIPTION	SPECIFICATION	MEAN SPEED KNOTS Average	KNOTS Limits	MPH Average	MPH Limits	DECSRIPTION IN FORECASTS
0	Calm	Calm; smoke rises vertically	0	< 1	0	<1	Calm
1	Light Air	Direction of wind by smoke drift, but not by wind vanes	2	1-3	2	1-3	Light
2	Light breeze	Wind felt on face; leaves rustle; ordinary vane moved by wind	5	4-6	5	4-7	Light
3	Gentle breeze	Leaves and small twigs in constant motion; wind extends light flag	9	7-10	10	8-12	Light
4	Moderate breeze	Raises dust and loose paper; small branches are moved	13	11-16	15	13-18	Moderate
5	Fresh breeze	Small trees in leaf begin to sway; crested wavelets form on inland waters	19	17-21	21	19-24	Fresh
6	Strong breeze	Large branches in motion; whistling heard in telegraph wires umbrellas used with difficulty	24	22-27	28	25-31	Strong
7	Near gale	Whole trees in motion; inconvenience felt when walking against against wind	30	28-33	35	32-38	Strong
8	Gale	Breaks off twigs generally impedes progress	37	34-40	42	39-46	Gale
9	Strong gale	Slight structural damage occurs; (chimney pots and slates removed)	44	41-47	50	47-54	Severe gale
10	Storm	Seldom experienced inland; trees uprooted; much structural damage	52	48-55	59	55-63	Storm
11	Violent Storm	very rarely experienced; Widespread damage	60	56-63	68	64-72	Violent Strom
12	Hurricane			>64		>73	Hurricane

TORRO HAIL SCALE

CODE	INTENSITY	SIZE CODE	DIAMETER	IMPACT	DESCRIPTION
H0	HARD HAIL		5MM	No damage	
H1	POTENTIALLY DAMAGING		5-15	slight general damage	
H2	SIGNIFICANT		10-20	Significant damage to fruit, crops, vegetation	
H3	SEVERE	3	21-30	Severe damage to fruit & crops, damage to glass and plastic structures, paint & wood scored	Walnut
H4	SEVERE	4	31-40	Widespread glass Damage, vehicle bodywork damage	Pigeon's egg > squash ball
H5	DESTRUCTIVE	5	41-50	Wholesale destruction of glass, damage to tiled roofs, significant risk of injurie	golf ball pullets egg
H6	DESTRUCTIVE	6	51-60	Bodywork of grounded aircraft dented; brick walls pitted	Hen's egg
H7	DESTRUCTIVE	7	61-75	Severe roof damage; Risk of serious injury	Tennis ball Cricket ball
H8	DESTRUCTIVE	8	75-90	Severe damage to Aircraft bodywork	Large orange > Soft ball
H9	SUPER HAILSTORMS	9	91-100	Extensive structural damage. Risk of severe injury to persons in the open	Grapefruit
H10	SUPER HAILSTORMS	10	>100	Extensive structural damage; Risk of severe or even fatal injuries to persons in the open	Melon

NB THE SEVEREST RECORDED IN THE BRITISH ISLES IS H8

EUROPEAN MACROSEISMIC SCALE (SHORT FORM)

EMS	DEFINITION	DESCRIPTION OF TYPICAL OBSERVED EFFECTS
I	Not felt	Not felt
II	Scarcely felt	Felt only by very few individual people at rest in houses
III	Weak	Felt indoors by a few people. People at rest feel a swaying or light trembling
IV	Largely observed	Felt indoors by many people, outdoors by very few, a few people are awakened. Windows, doors and dishes rattle
V	Strong	Felt indoors by most. Outdoors by few. Many sleeping people Awake. A few are frightened. Buildings tremble throughout. Hanging objects swing considerable. Small objects are shifted. Doors and windows swing open or shut
VI	Slightly damaging	Many people are frightened and run outdoors. Some objects fall. Many houses suffer slight non-structural damage like hairline cracks and fall of small pieces of plaster
VII	Damaging	Most people are frightened and run outdoors. Furniture is shifted and objects fall from shelves in large numbers. Many well-built ordinary buildings suffer moderate damage; small cracks in walls, fall of plaster, parts of chimneys fall down; older buildings may show large cracks in walls and failure of fill-in walls
VIII	Heavily damaging	Many people find it difficult to stand. Many houses have large cracks in walls. A few well-built ordinary buildings show serious failure of walls, while weak older structures may collapse
IX	Destructive	General panic. Many weak constructions collapse. Even well- built ordinary buildings show very heavy damage: serious failure of walls and partial structural failure

X	**Very destructive**	**Many ordinary well-built buildings collapse**
XI	**Devasting**	**Most ordinary well-built buildings collapse, even some with good earthquake resistant design are destroyed**
XII	**Completely devasting**	**Almost all buildings are destroyed**

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ABOUT THE AUTHOR

Malcolm Johnson has had a keen interest in the weather since childhood, and was heightened by a holiday in 1956 which took him to Lynmouth, scene of a severe flood in 1953, the dry summer of 1959 and the smog and snow of 1962/63.

Upon leaving school, he worked for Eagle Star from 1967 until 1972, the insurance department of Trafalgar House Investments from 1973 until 1980, where he spent much of his time knee deep in mud on construction sites dealing with claims and in 1980 he became a loss adjuster initially with Malcolm Sheppard & Co Ltd. He left Malcolm Sheppard in 1985 and joined Preston, Hawes and Walker in 1985, rejoining Sheppards in 1987. He remained with that firm and its successor companies, (Fishers, Miller and Miller Pycraft, before joining The Claims People Group in 2003 and then Stuart Neal & Co Ltd in 2006, where he is currently employed.

He was Secretary of the Insurance Institute of Croydon from1985 until 1990 and then became Secretary of the Southampton Institute in 1993 until 2004. He served as President of the Institute of Southampton in 2004/5.

He is an Associate of the Chartered Insurance Institute, a Chartered Insurance Practitioner, Fellow of the Chartered Institute of Loss Adjusters, Fellow of the Federation of Adjusting Associations and a member of the Association of Insurance Surveyors, as well as being a Fellow of the Royal Meteorological Society.

In his interest as a weather enthusiast he is also a member of the Climatological Observers' Link and The Weather Club. He was also for several years the weather presenter for Angel Radio, a volunteer run radio station in Havant, Hampshire.