

2014 Infringement Data

As recorded by Linewatch members

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2014 Linewatch Infringement Data

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2014 Linewatch Infringement Data

Executive Summary

Linewatch encourages its members to promptly report any infringement or near-miss into the database (LIDB) in order to identify any trends that will assist in reducing the number of serious incidents. This analysis is based upon data input by ten Linewatch members for the calendar year 2014. Although not all the members recorded infringement data, some have submitted “nil infringements”. No response was recorded from Centrica, Conoco-Phillips, Marchwood, Wingas and National Grid.

There was a step rise in overall numbers of infringements reported to a total of 382 events in 2014 (321 in 2013) This included 25 malicious damage incidents of unauthorised “hot-taps” which have proved the major factor in the unusually large increase in “High” category records in the year.

Data evaluation confirms that “Landowners” remain the main source of risk to pipeline integrity in terms of numbers of infringements. This is also of concern when the methods used for what is termed “normal agricultural practice” have changed considerably over the past few years. Sub-soiling, mole ploughing and fencing are among those practices.

The equivalent numbers of events involving other infringers shows a general and continued easing. This may, in part, be due to the success of targeting some of the worst offenders in previous years. These will form the direction of proactive Linewatch Safety Awareness Briefings and presentations for the forthcoming year.

Encouragement is given to report “Near-miss” situations as well as actual infringements.

Key elements for 2015 include;

- To encourage use of the revised Infringement Database (LIDB)
- To encourage the shift in cultural change and report Near Miss events
- Proactive achievable identification of target audiences of infringers

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Preamble

Linewatch encourages its members to report any infringement or near-miss in order to identify any trends that will inform the target of reducing the number of incidents. This analysis is based upon data by the 17 (12 operators provided input) Linewatch members for the calendar year 2014.

The Linewatch categories are computed from 2 elements as determined from the following matrix:

Consequence				
HIGH	LOW	HIGH	HIGH	
MEDIUM	LOW	MEDIUM	HIGH	
LOW	LOW	LOW	MEDIUM	
	LOW	MEDIUM	HIGH	Likelihood

Where:

Consequence HIGH = Densely populated residential areas, sensitive development (schools etc.), major infrastructure (airports etc.) and hazardous areas

MEDIUM = Light industrial, low population, water courses/environmentally sensitive, major roads and railways

LOW = Agricultural or other land

Likelihood HIGH = Works had potential to cause serious damage (e.g. Deep excavations, unaware of pipeline, dangerous practices)

MEDIUM = Works could possibly have caused minor damage under different circumstances (e.g. Service trenches, excavations at shallower depth than pipe invert)

LOW = Works within easement/wayleave but no potential for damage (e.g. pipeline protected, hand excavation)

The additional category of Near Miss expands the depth of reporting. Whereas the judgement of whether, or not, to report a Near Miss can be somewhat subjective, these records provide insight to preventing future encroachments. In general terms, a Near Miss will be an event that was identified as occurring outside of the easement but would have been an infringement if it had occurred within the easement.

2014 Linewatch Infringement Data

Presentation of 2014 reports by Date

Infringements by Date (subdivided into Linewatch risk)

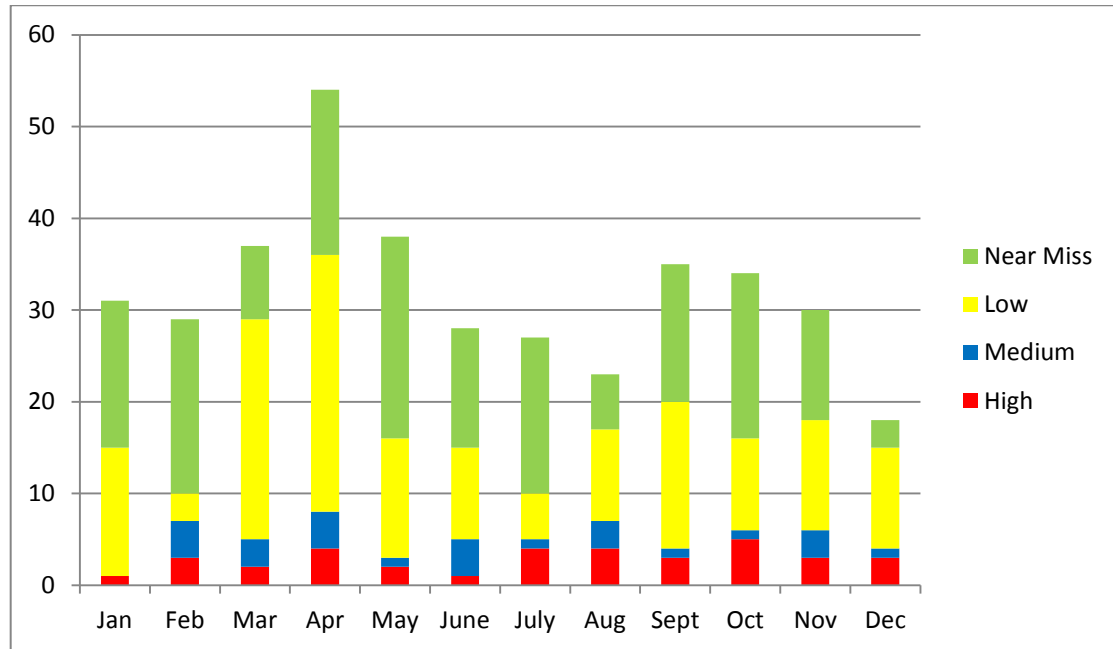


Figure 1

2014	High	Medium	Low	Near Miss
Jan	1	0	14	16
Feb	3	4	3	19
Mar	2	3	24	8
Apr	4	4	28	18
May	2	1	13	22
Jun	1	4	10	13
Jul	4	1	5	17
Aug	4	3	10	6
Sep	3	1	16	15
Oct	5	1	10	18
Nov	3	3	12	12
Dec	3	1	11	3

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Discounting the 25 records of “malicious damage” where the pipelines were tapped by 3rd Party unknown persons, the 8 remaining High category infringements covered a number of activities and are detailed as follows;

3 rd Party	Working for	Location	Pre-notified	Damage prevented	Location type	Notified /found by	Activity type
Contractor	Utility	Strood	No	No	Development Zone	Aerial Patrol	Installation
Contractor	Landowner	River Nar	No	Yes	Private land	Aerial Patrol	Ditching
Contractor	Developer	Daventry	No	Yes	Farmland	Ground Patrol	Excavation
Contractor	Utility	Speen	No	Yes	Road verge	Road Patrol	Excavation
Landowner	Landowner	Cheshunt	No	No	Residential	Aerial Patrol	Excavation
Contractor	Utility	Torksey Lock	No	Yes	Road Verge	Road Patrol	Excavation
Contractor	Railway	Harrowden	No	Yes	Farmland	Road Patrol	Earth Moving
Contractor	Landowner	Ellesmere Port	No	No	Industrial	Ground Patrol	Borehole

All of the main contractors and associated Utilities were interviewed by the relevant operator and included in the annual Linewatch Safety Briefing calendar as appropriate.

2014 Linewatch Infringement Data

Presentation of 2014 data against 2013, 2012 & 2011

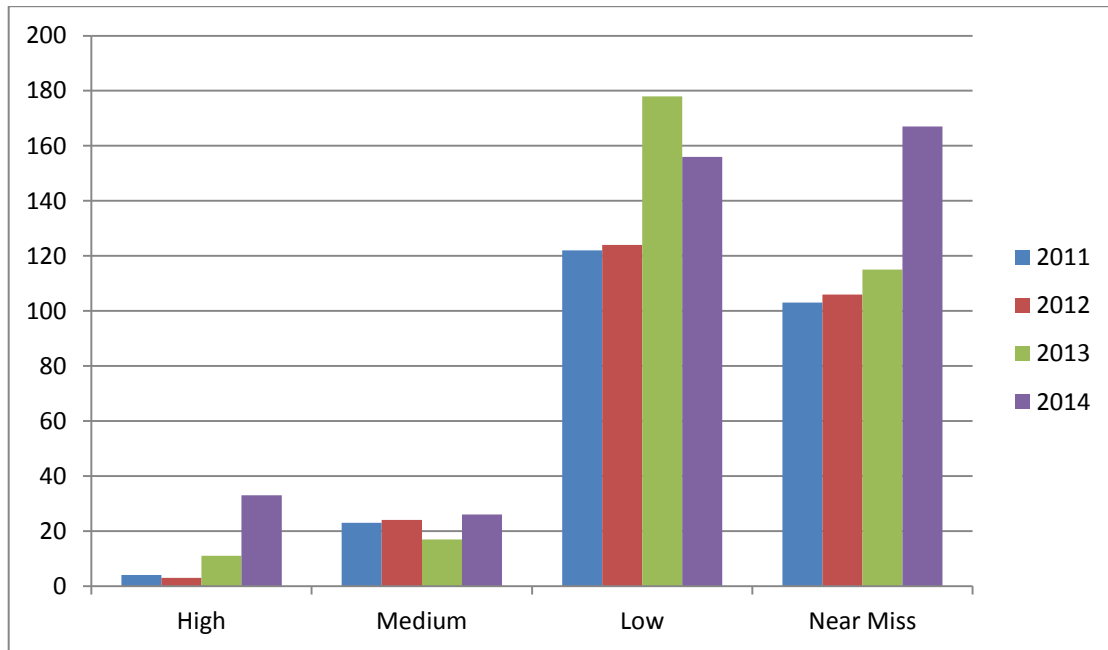


Figure 2

As expected the reporting of Near Miss encroachments has been embraced as a culture change and thus seen to increase year on year.

	High	Medium	Low	Near Miss
2014	33	26	156	167
2013	11	17	178	115
2012	3	24	124	106
2011	4	23	122	103

The increase in “High” category reports is discussed in greater detail within the analysis.

2014 Linewatch Infringement Data

Presentation of 2014 reports by “how found”

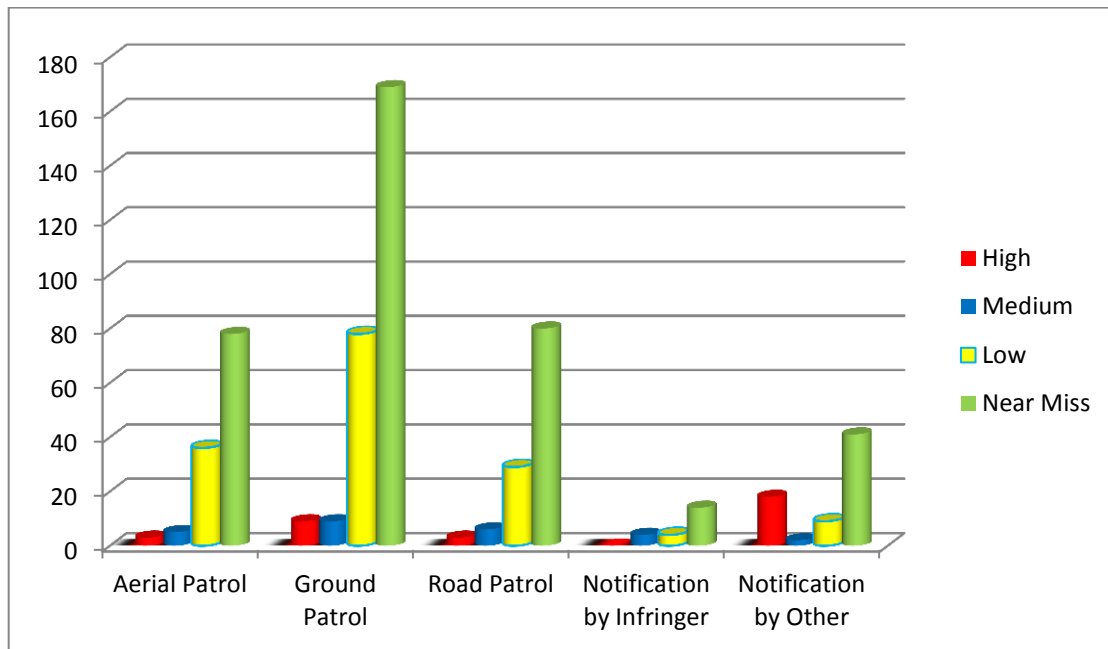


Figure 3

The results for 2014 present a further shift from previous years when infringements found by operator patrols was split quite evenly between aerial, road and ground.

In 2014, found by “aerial patrol” accounts for 122 records or 32% of the overall total of reported infringements. This is a return to expected levels of previous 5 years. .

	High	Medium	Low	Near Miss	Total
Aerial Patrol	3	5	36	34	78
Ground Patrol	9	9	78	73	169
Road Patrol	3	6	29	42	80
Notification by Infringer	0	4	4	6	14
Notification by Other	18	2	9	12	41

2014 Linewatch Infringement Data

Presentation of reports by Location type 2014

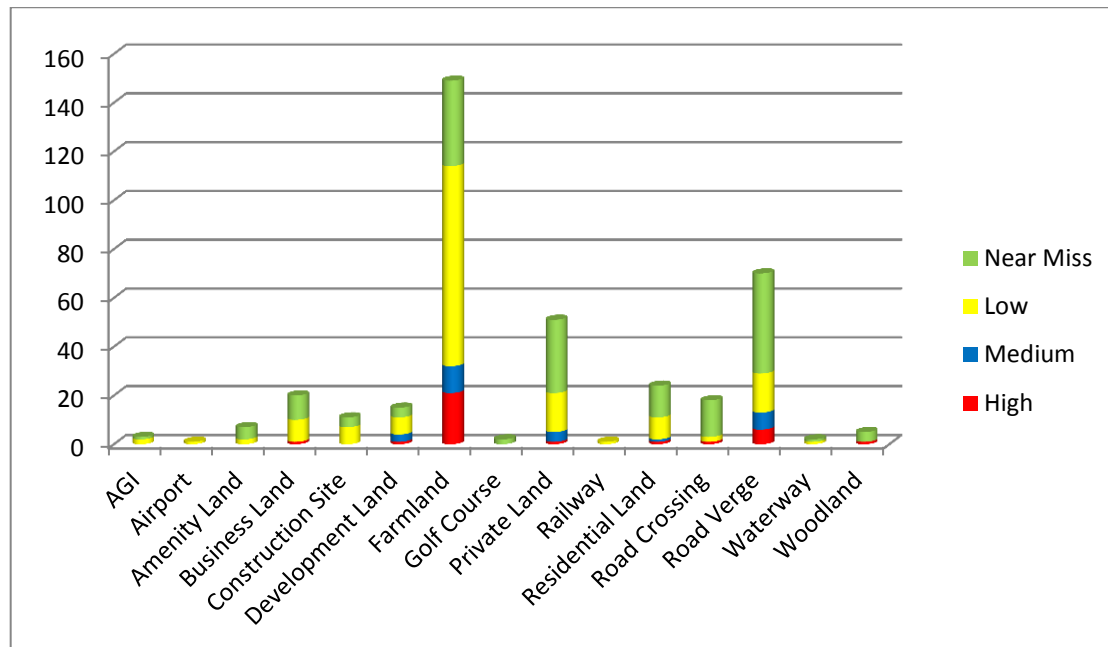


Figure 4

	High	Medium	Low	Near Miss	Total
AGI			2	1	3
Airport			1		1
Amenity Land		10	2	5	17
Business Land	1		9	10	20
Construction Site			7	4	11
Development land	1	3	7	4	15
Farmland	21	11	82	35	149
Golf Course				2	2
Pathway				2	2
Private land	1	4	16	30	51
Railway			1		1
Residential Property	1	1	9	13	24
Road Crossing	1		2	15	18
Road Verge	6	7	16	41	70
Waterway			1	1	2
Woodland	1		1	4	6

2014 Linewatch Infringement Data

Presentation of reports by Infringer type 2014

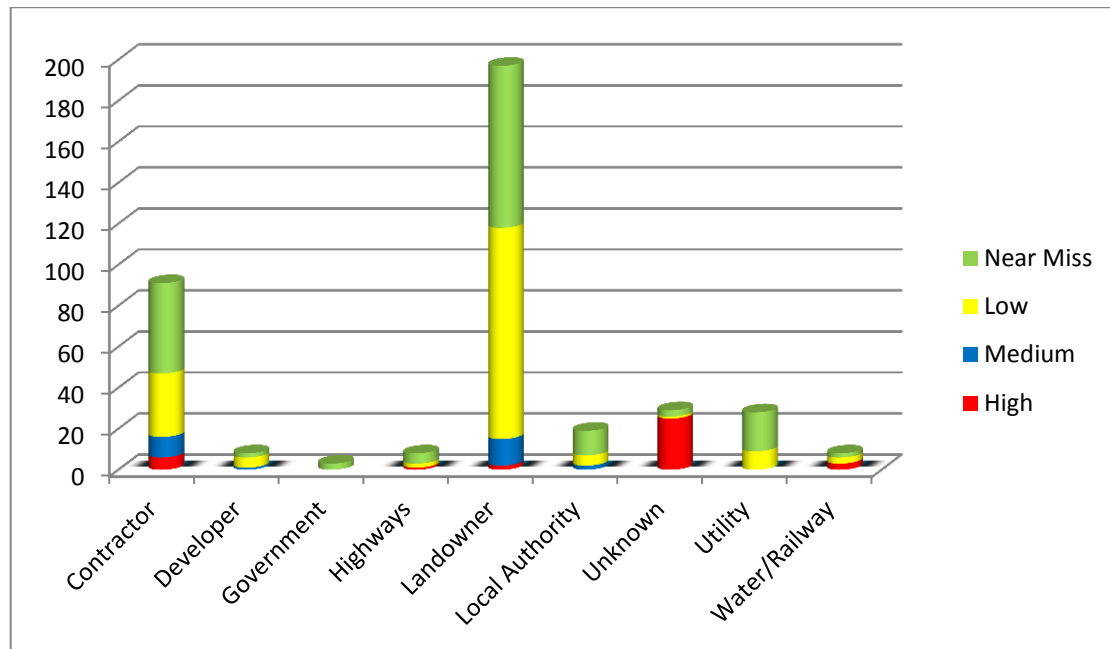


Figure 5

	High	Medium	Low	Near Miss	
Contractor	6	10	31	44	91
Developer		1	5	2	8
Government				3	3
Highways	1		2	5	8
Landowner	2	13	103	79	196
Local Authority		2	5	12	19
Unknown	25		1	3	29
Utility	2	3	11	11	27
Water/Railway			1	3	4

The contractor breakdown is further demonstrated by the following pie chart, figure⁶, through developing the analysis into the sponsor or the entity who had engaged the contractor.

2014 Linewatch Infringement Data

Contractor Working for

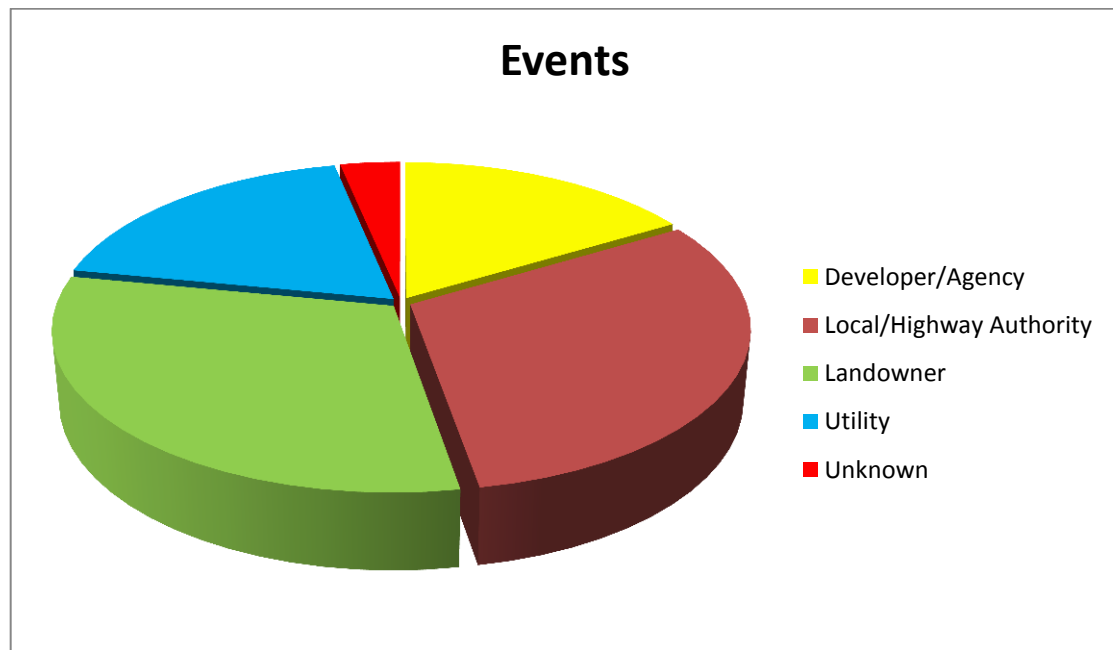


Figure 6

Developer/Agency	15	16%
Local/Highway Authority	28	31%
Landowner	28	31%
Utility	17	18%
Unknown	3	3%
	91	100%

Whilst there is some distortion of the recorded numbers from a varying interpretation of who was the actual sponsor, the duty of care responsibility spreads evenly across the survey set. There is an easing of the Utility reports but an increase in those contractors working for Landowners by 2 percentage points in each case.

It is noted that, although the records of “unknown” are small, the quality would likely be improved further by more rigorous investigation and also by updating the records database by corrected reporting.

2014 Linewatch Infringement Data

Presentation of reports by Activity Type 2014

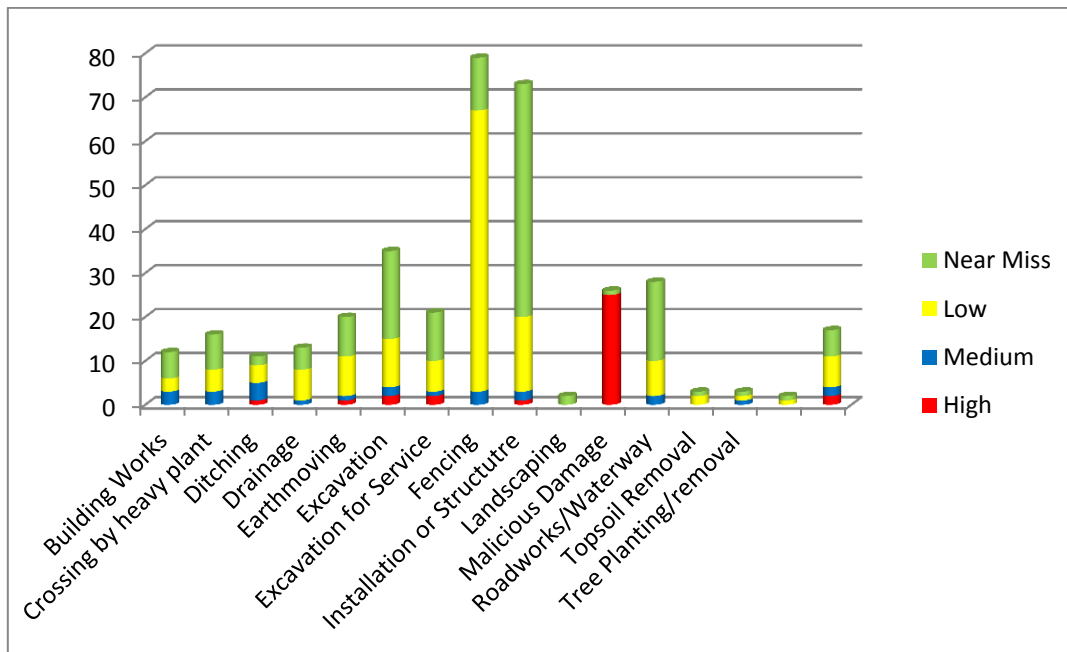


Figure 7

	High	Medium	Low	Near Miss
Building works		3	3	
Crossing by heavy plant		3	5	8
Ditching	1	4	14	12
Drainage		1	7	5
Earthmoving	1	1	9	9
Excavation	2	2	11	20
Excavation for service	2	1	7	11
Fencing		3	64	12
Installation or structure	1	2	17	53
Landscaping				2
Malicious Damage	25			1
Roadworks/Waterways		2	8	18
Topsoil removal			1	2
Tree/Veg planting/removal		1	1	1
Unknown Activity			1	1
Waste dumping/burning	2	2	7	6

Critical analysis shows 76 fencing events were directly attributed to Landowners or their contractor out of a total of 79.

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Analysis and Discussion

A total of 382 infringements and near-misses were recorded by members in 2014, figure ¹. This is a further increase on 2012 & 2013 data sets. The increase in numbers does generally match that increase in reporting of “Near Miss” and “Low” risk events but indicates Line-walking and Road Patrols, as inspection activities, has identified an increase in Landowner related activities. These include fencing and ditching in particular which are known to be difficult to observe and interpret by aerial patrol alone.

The date or chronological distribution through the year remains fairly even and associated largely with the number of working days. The exception though is April which identified a higher percentage number of events that were directly associated with Landowners.

It can also be shown that September included an increased number of infringements. A more detailed review of the records showed a large number of “Low” risk records. These were an expected distribution of farming and utility activities and may well be a delayed work scope from any originally planned for the previous month.

As in the previous reporting years, analysis of the data clearly shows “Landowner” and “Contractor” as being the largest and increasing category of infringer, figure ⁵. The other element common with previous years is the high number of infringements assigned to “Contractor” that also relate to working for a Landowner.

The remaining categories are equally and sparsely distributed especially when the allocation is of 73 records across only 6 Third party types. A small increase in recorded “unknown” infringers suggests a slippage in the “root cause” investigations. The 25 events of “unknown” resulting from “malicious damage” or unauthorised hot-tap connections are noted but not discussed in any detail within this report.

There still remains an apparent reluctance for land users, tenant or others, to suitably plan, contact and agree works in a fully safe mode with the operators.

Taking the data from the extended “Contractor” pie-chart, figure ⁶, it is notable how those contractors sponsored by Landowners remain predominant and Utilities account a similar percentage as in 2013. Previous years have indicated a trend towards a more even split between LA/Highways, Landowner and Utility. Further analysis will extend this through 2015 although there is a consensus that the Linewatch awareness programme and the promotion of LinesearchbeforeUdig are both having a positive effect.

It should also be noted that only 13 of the infringements occurred following some planned notification. Further detail shows these included no High category events. All the High category events were NOT pre-notified.

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By analysing the numbers of infringements and the correlation of how these were firstly identified, figure ³, there are some interesting points to consider. The results for 2012 correlate with 2011 where infringements found by operator patrols are split quite evenly between aerial, road and ground. In previous years the greatest number of reports has tended to be as a result of aerial patrols.

In 2013 and 2014 there is a marked increase in those infringements recorded by Ground or walked Patrol. This does tend to suggest that a great many additional Low Category and Near Miss events would have been recorded during the line-walking, as expected. It may also be expected since the increase in ground patrols as part of the “hot-tap” investigations would have put more local inspection on the ground.

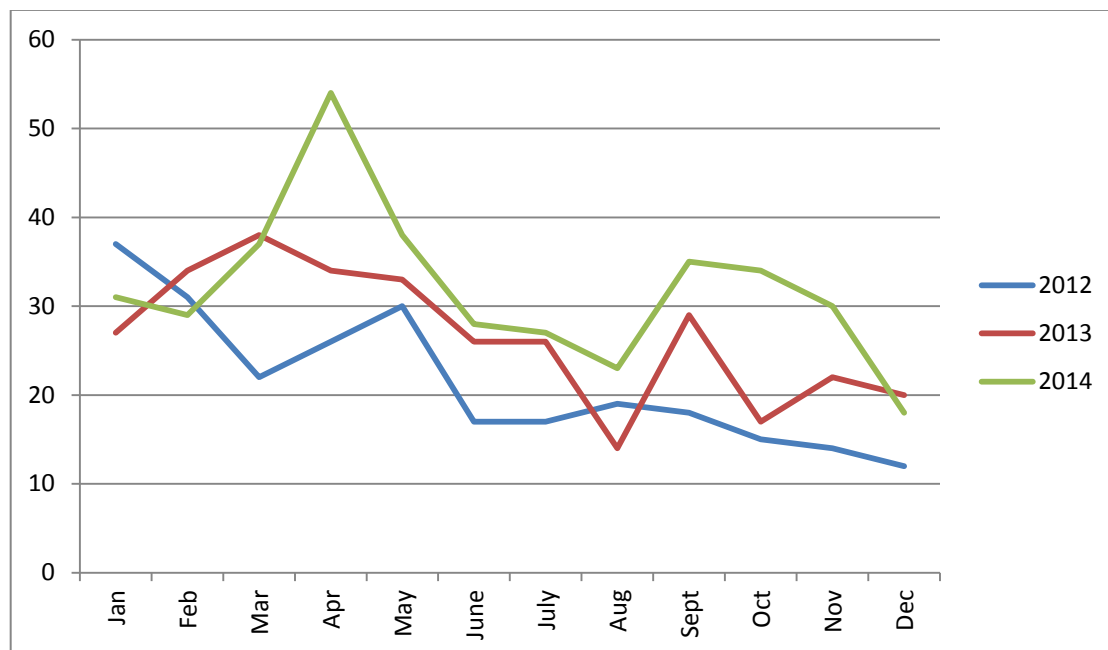


Figure 8

In the presentation pages the data for comparing year on year infringements by risk has been extended to allow a three year view, figure ². Above is that three year focussed view produced within the Linewatch database.

From both data presentations, though it is clear that more data is being collated and recorded on “Near Miss” events. These are generally associated with those activities which may be considered of less risk or consequence. In sympathy with this there was a greater increase in those “Low” risk activities than as recorded in previous years. There is little correlation with the number of LSBUD enquiries either as a “lagged” event or during the same month.

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It is likely that this is due to an increased level in awareness of the personnel undertaking the surveillance patrols coupled with a greater appreciation of the infringer to look for marker posts etc. In both cases it is a trend to be encouraged.

There is, though, a clear cultural step change throughout the Linewatch members to report the “Near Miss” events. For those who contribute there is now a strong basis for identifying areas for focus of preventing occurrence rather than reacting to an infringement. It has for some time been acknowledged that a great many Low Risk or Near Miss events have remained unreported and handled locally as being resolved before the activity became an issue. This includes engaging with Councils and Highways authorities to assist in pre-alerting the Linewatch members of proposed works even though these may be “allowable” under any easement rights.

There are still some Linewatch members who do not appear to use the LIDB to record any infringements but are known to have experienced reportable events. The reporting of all infringements should be one of the prime KPI targets for each Operator and that by that reporting we can develop systems and plans that proactively prevent rather than reactively handle. Whilst there may be still room for improvement in the quality of the “Near Miss” reporting the trend to collate and share this information should be encouraged.

These records also indicate that the number of “unknowns”, either for the identity of the Third Party Type or Sponsor is generally reducing. The clear inference is that a greater effort is being made by the patrols and thus providing a more thorough investigation processes. This should be encouraged and each member may consider that all events should be identified against a specific name or location and not just remain as an “unknown”.

As in previous years, analysis of the “by activity” data shows a wide range of activity types, figure 7. The two categories that are predominant are “Excavation/Installation” together with the consistent high event “Fencing”. The majority of sponsors relate directly to Landowners or their contractor.

Fencing works were recorded as the primary activity and the majority of incidents. This can be shown to be affected by the fact that landowners were the major infringer type. However, in general fencing works are seen to be of a low risk due to the, relatively, shallow penetration of the works – some 3 of the recorded incidents were classified more serious than “Low risk” and largely due to the methods used. It is clear that the techniques and equipment employed for modern fencing do involve the use of more mechanised methods thus, in itself, could be tending towards an increased risk of damage.

There have been amendments to the database so that the techniques of “sub-soiling” and other deep ploughing type of activities can be recorded more accurately.

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“Excavation for Service”, “Installation of Structure” and “Ditching/drainage” all remain high incidence as a combined grouping of activities. Again these have tended to be a mixture of Landowner (both public and private) and Utility operators.

Given the high level of activity in the highway, the number of incidents attributed to “Roadworks” reflects the fact that pipeline chainage is relatively low in the highway. An estimate of less than 10% “in the highway” chainage has often been referred to.

The number of infringements in the highway, however, is shown at zero for 2014. There were only 7 Medium Risk events recorded as “Road Verge”.

This should give rise to debate as to guidance for the Pipeline Operators on the focus of future damage prevention, HAUC shows, highway authority liaison and the Safety awareness programmes.

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With the large increase in numbers of “Near Miss” and even “Low Risk” reports there is a benefit to be gained from using an agreed form of weighting when applying the statistical analysis to the whole Infringement data set. A variety of options were reviewed but none were seen as fully statistically appropriate. The simple structure below is adopted as consistent with the previous three years.

Risk Category	Weighting x
High	10
Medium	5
Low	2
Near Miss	1

Application of this amended weighting proved, as expected, a heavy focus on Landowners. Note: a similar weighting scheme was applied within the UKOPA report for the Contractors and Sponsors only.

Infringer code for 2014	Number of “H” records and (total events)	Weighted Total
Landowners	2(231)	300+
Unknown	28(47)	40*
Contractors	5(137)	250+
Railways	1(4)	16
Contractor A	1(2)	15
Utility A	1(3)	12
Utility B	1(3)	12
Contractor B	1(1)	10
Contractor C	1(1)	10
Utility C	1(1)	10
Utility D	1(1)	10
Contractor D	1(1)	10
Contractor E	0(3)	7

Several contractors and utilities were identified as recording a single Medium Risk event (weighted 5) but are not listed separately.

The identity of the coded infringer is held securely by the Linewatch Manager.

*does not include the weighting for “malicious damage” events

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Summary

There was a rise in overall numbers of infringements reported to a total of 282 events in 2014. This can be largely attributed to the cultural shift of reporting Low Risk and Near Miss categories although an increase in High Risk activities also exceeded expected targets. The High Risk events associated with unauthorised hot-taps or malicious damage are not discussed in any detail within this report, merely recorded as fact of damage.

“Landowners” remain the main risk to pipeline integrity in terms of sheer numbers of infringements. This is also of concern when the methods used for what is termed “normal agricultural practice” have changed considerably over the past few years. This is of particular concern when very few “Landowners” use the formal LSBUD notification system although more regular direct contact does indicate an increase of “phoned in” notifications for planned works.

The equivalent numbers of events involving other infringers shows a general and continued easing. This may, in part, be due to the success of targeting some of the worst offenders in previous years. The number of incidents either involving or initiated by Highways Authorities and Water utilities, in particular, would appear to be decreasing on the previous high in 2011.

There is a suggestion that only some of the Linewatch members are robustly reporting all infringements, largely Near Miss reports, and that cultural improvements may possibly be made. The range of number of infringements per 100km varies between 0 and 15. The average for those operators who have reported is 8.5 events/100km.

It would be expected that even those operators with relatively short pipeline lengths or have largely remote sections would have identified some infringements.

Encouragement is given to report “Near-miss” situations as well as actual infringements.

Whereas this report gives some comfort from the fact that the quality of infringement reports has increased, the group as a whole should encourage all the members to contribute even the Near-Miss events.