

TIMBER TRANSPORT FORUM

The Timber Transport Forum held its annual conference in the Easterbrook Hall on the Crichton Estate in Dumfries on 13 March. Forestry Journal, based on the Crichton Business Park just opposite, didn't have far to travel to attend and report on proceedings.

The conference was chaired by **Alistair Speedie**, director of planning and environment services for Dumfries & Galloway Council and chair of the TTF since 2004. "It is ten years ago that the TTF national conference was held in Dumfries, and at that time it was celebrating the strategic timber transport fund for Scotland. Ten years on we will hear today of the achievements and the successes, and look at technical innovations and future planning."

Guest speaker, **Councillor Colin Smyth**, chairman of the economy, environment and infrastructure committee for Dumfries & Galloway Council, welcomed delegates to Dumfries, giving a brief history of both the Crichton estate and the region in general. Referring to the haulage industry, stretching from Stranraer in the west across to Langholm and the Esk Valley, he said it was clear why Dumfries was the ideal conference venue.

Dumfries & Galloway has the highest concentration of forestry in the UK, with 31% of the land covered with forest. The region is a major timber producing area, and home to some of the top sawmills in Britain, including James Jones and BSW, all processing local timber. It is also home to Scotland's largest biomass power station, near Lockerbie. The timber industry is one of the most important employers in the region, with almost 3,000 jobs across several sectors. Importantly, the majority of timber grown in the region stays in the region, supporting low-carbon initiatives.

Timber production presents challenges as well. Its transport results in heavy traffic on minor council roads. Budget pressure is also high, with the council having to find £27 million of savings over next three years.

"The challenges that we will be discussing today are vital to regions such as Dumfries & Galloway. The Timber Transport Fund has allocated £23 million, distributed across a range of projects in Scotland. It is important that this funding remains in place. The prospect of securing match funding makes a huge difference when councillors are making decisions on budget allocations.

The next speaker was **Andy Leitch**, timber development policy advisor with the Forestry Commission, and manager of the timber transport fund for the last six years. He began by putting into context why timber and timber transport is so important to the Scottish government and FC Scotland. The Scottish Forestry Strategy aims to maximise the deliverables for a wide range of stakeholders. While concentrating on timber, increased use of a cross-laminated timber products, particularly made from local timber, would store a significant amount of carbon and contribute positively to climate change objectives as well as the timber ones.

Timber plays a very important role in the economy of Scotland. The more timber we produce at home the less we have to import, and that all helps the economy. Scotland has very high climate change targets, timber sequesters carbon dioxide – but once trees mature they sequester less, so the answer is to thin those trees and replant, and use that timber to store carbon by getting more into construction.

"So," asked Andy, "how much timber are we talking about?" In Britain there is a total standing volume of conifer of 336 million cubic metres obs – 87 million in England, 37 million in Wales and 212 million in Scotland. Scotland has 900,000 hectares of conifer forest, with policy in place to increase this by 10,000 hectares *per annum*. The 25-year production forecast for standing timber from Scotland's forests shows that in the three-year period commencing 2012 there will be 8 million cubic metres obs coming to market, increasing to 12 million in the next 15 years. All that timber has to be brought out of the forests and into the processing sites, and that's where the Strategic Timber Transport Fund (STTF) comes in.

The aim of the STTF is to facilitate the sustainable transport of timber in rural areas of Scotland for the benefit of local communities and the environment. The scheme, managed and funded through FC Scotland, is supported and sifted at regional timber transport group level. The fund supports mainly infrastructure, support and specialist equipment. To date, 99 awards totalling £23.1 million have been offered (a total value of £51 million with co-funding), with timber volumes equal to 1,000,000 loaded lorry journeys.



(Left to right) John Morgan, Andy Leitch, Adriana Hudecz, Alistair Speedie, Elaine Jamieson, Alan Dickerson, John Lyons, Colin Smyth, Jeremy Walker, David Edwards.

Speaking of future funding, Andy said that there would be a fund of £3 million for 2015/16 with a call for applications in the near future to allow suitable time for planning. Projects must be complete by March 2016.

John Morgan, director of Greenpower, a renewable energy company based in Scotland, is involved with the Carraig Gheal wind farm in Argyll and has led the development of the West Loch Awe timber haul route.

In terms of stakeholders, not surprisingly for a project of this size and complexity, there were a number of parties involved, including the Scottish government in various guises, along with FC, SNH and SEPA, the local community who would benefit from the haul route, and landowners, with FC being the chief one. John ran through how the West Loch Awe timber haul route standard was achieved. "We were talking about 5,500 hectares of forest producing 100,000 tonnes of timber annually. The stress was apparent on the public road network and there was a clear need for an alternative route. The route was derived from existing forest design proposals and developed with Forest Enterprise engineering staff. In establishing the plans, common ground had to be reached. The requirements were slightly different for the wind farm and the haul route. For timber haulage the route had to be well cambered, well drained, and have a steady, limited gradient with cross-fall and super-elevation on bends, with robust culverts and bridges. It also required a good running surface that could be maintained at low cost over the long term. The wind farm also required limited camber and restricted geometry on bends. A common road camber was achieved, with differences remaining only on bends."

With support from Argyll Timber Transport Group the project secured funding from the STTS for 36km of forest haul road shared with a wind farm. Construction cost £5.4 million, with £1 million coming from STTF. "There are still some issues," said John. "However, long-term benefits include carbon reduction and the diversion of timber away from the Loch Awe communities – 4,000 lorryloads taken off the public roads over a year. We are still dealing with snags and working to resolve these."

Brian Young, roads network manager for Scottish Borders Council, then told the conference of the issues facing timber haulage in the Borders region. Just under a fifth of the Scottish Borders is forested. Some roads are better than others; typically timber traffic starts on the poorer sections.

In line with most areas, the existing road network was established a very long time ago and is of a varying standard, ranging from decent quality trunk roads down to single-track roads, often without passing places, and of limited structural strength. Despite living in the midst of such a densely forested area, a large percentage of the community would rather timber transport didn't use the public road system at all. Some complaints about timber transport are justified, said Brian; some, however, are based more on perception than fact. The most common complaint still tends to be speeding and intimidation. Interestingly, in terms of noise and vibration, unloaded lorries often attract as much complaint as loaded ones. Other complaints involve driver behaviour, such as the use of mobile phones, passing places not being used, timber vehicles cutting corners and vehicles travelling in convoy. Road damage is another major complaint, such as verge rutting due to over-run, with deep ruts potentially damaging to other road users.

Brian then spoke about the Craik Forest Project, an idea initiated in the mid-2000s to improve timber extraction from this significant forest. The rationale for the project was to improve in-forest haul roads and strategic sections of the B709 to link with a previous STTF scheme at Eskdalemuir in



1. Would you cross-pile logs like this in a flat area of the forest, let alone on a slope next to a live carriageway? 2. Glasgrid technology – an important element in strengthening the road to enable it to withstand predicted loadings. 3. Wind farm routes require limited camber, and restrict geometry on bends.

Dumfries & Galloway. A five-phase project, the initial STTF application was for the first phase of the project to upgrade 11km of the B709 as a joint project over two authority areas (£850K). Unfortunately, phase 2/3 hit major problems in relation to land ownership and maintenance agreements. Phase 4 was for just over 4.1km of public road improvement (£573k) in the north, and phase 5 £710k for Potburn Road improvement, around 8km. When phases 2 and 3 hit problems, the STTF were extremely understanding and allowed later phases of the project to be brought forward. The Potburn Road works included improvements to drainage systems, including resurrecting ditches on the top side of the road, clearing stone culvert cross drains and replacing collapsed culverts. Passing places, both new and improved, assist road users in passing haulage lorries and prevent the deterioration of the verges.

The installation of a Glasgrid reinforcing system strengthened the road sufficiently to enable it to withstand the predicted future loadings.

Next up, **David Edwards**, UPM district manager for Wales and the Marches, spoke about timber transport from Tywi Forest in Mid Wales. Established in the '60s and '70s, Tywi Forest extends to 15,000 hectares and is two-thirds state-owned and one-third private. Timber production has increased threefold in recent years, with a forecast of 120,000 m³/year for the next 15 years. This represents 15% of all Wales' round timber.

There has been a massive increase in both the size and frequency of timber wagons over the years; the problem being that they are still using the same road infrastructure, which dates from the early 20th century and in places is little more than drover's roads sprayed over with tarmac – definitely not designed for 44-tonners!

David spoke of the issues faced with Tywi Forest. Three unitary authorities were all affected where the routes meet in Tywi. There were issues with private road trespass, increasing pressure on the Tywi to Llandovery route, and increasing traffic to the Port Talbot biomass plant. Additional bridge closures, along with height restrictions, prevented one-way running.

In May 2012 the Tywi Timber Transport Forum collaboration of NRW, Carmarthenshire, Ceredigion and Powys Councils, Aitchesse and UPM Tilhill identified seven projects, and funding was secured for the first two. Project 1 involved roadside vegetation management to improve restricted sight lines and clear natural regeneration which was preventing the Highway Authority from maintaining roadside ditches and culverts. This was on a major feed road to the link road and the works greatly improved road safety, said David. "You can now see 44-tonne trucks without the need for emergency braking!"

Project 2 involved work on the 8-mile Cwm Henog to Esgair Dafydd link road, which diverts traffic away from the valley running down towards Llandovery and avoids the communities of Rhandirmwyn and Cilycwm. The link road passes through private and WG forest and previously only FCW traffic could pass over the private section.

Capital works included cleaning drains and culverts, re-stoning sections with stone won on site, and binding the surface with 'badger sand' dug and screened from a neighbouring property. This is ¾ inch or smaller angular gravel with decent clay content that binds very well when rolled, to give a good running surface. The route was tarmacked at both ends to avoid mud and debris spilling onto the highway.

Letters of authority for use are required for insurance purposes, and 131 vehicles to date have registered to use the route. Traffic counters have been installed at either end, which give a good indicator of use. The lack of complaints from the local community indicates it is doing its job. Maintenance after the first winter, said David, is likely to be higher than anticipated due to the prolonged wet weather.

Talking of the future, David said that seven schemes had been identified, with these two delivered. A third, the Pontrhydfendigaid Diversion, was

work in progress, one had been superseded by council works and three others were still aspirational.

Jeremy Walker, chair of the North Yorkshire Timber Freight Quality Partnership, then spoke of the Cam Wood case study. Cam Wood is within a very traditional moorland that is important to the National Park. There were two potential routes to get timber out, one to the east over mixed ownership towards the agreed route on the western side. The western route was blocked by a narrow gate and NYCC were under pressure to enforce access. The other option involved going east towards Gayle and Hawes.

A temporary restriction on timber traffic on Gayle Lane was about to be lifted; the community in Gayle was fearful and angry and there was a complete absence of trust. Local councillors had raised concerns.

A temporary solution involved engagement with the main parties, building trust with the landowner and getting an understanding of what could work for him. In addition, a commitment was made to find a long-term solution. This came in the form of an upgrade to the western section of the Cam Highway – a traditional moorland track – and the creation of new access into the wood. This was a lower-cost option, with very little community impact, and it had fewer safety issues and less impact on the highway. It did, however, require planning and landowner agreement.

Planning permission was resisted by the National Park at first, which was concerned about landscape impact and the impact on recreational users. A change of owner changed the dynamic, bringing about a much more collaborative approach, and consent was granted in March 2013. Lessons learnt include the importance of communication with all parties and interests, listening to and understanding the different positions.

Gillian Clark, CEO of FISA, explained the work of FISA and said that membership was currently running at 417, the largest proportion of members being contractors. Gillian then gave a brief outline of the role of the various Working Groups and said how many of the documents produced would overlap with haulage, even though aimed at harvesting contractors.

WG 6 is involved with forest haulage protocols and talks are taking place with crane trainers to provide industry-specific training for forest works. A haulage safety booklet has also been produced, aimed specifically at drivers, and the group is looking at GPS/route mapping improvements.

Elaine Jamieson, FC Scotland development officer for Perth and Argyll, then spoke about planning timber haul routes, with particular reference to the planning framework and environmental impact assessment (EIA) regulations. Timber haul routes, said Elaine, are usually seen as a General Permitted Development under the Town and Country Planning Act. Forest roads do, however, need an EIA determination, where FCS determines whether a project requires to undertake an EIA before deciding if consent should be given for work to go ahead.

Elaine said that applications for EIA determinations often lack detail, which can affect the process if additional information is required. If applicants have already done their homework on any potentially significant impacts, and include correspondence from Scottish Natural Heritage, HSE, etc, this can make the process quicker.

Elaine referred to the West Loch Awe timber haul route, where an EIA was required due to the scale and potential effect on a number of interests. The project was under a great deal of scrutiny because of its link to the wind farm and had been subject to a number of freedom-of-information requests. There were 22 conditions on the final consent, some applying ongoing restrictions to the use of the route for timber haulage. There are commitments running through the build to post-construction monitoring, as well as enhancement commitments. Elaine said that with collaborative

timber transport scheme projects, EIA determinations and felling licences should be done collaboratively. Forest plans/agreed maps should be submitted to FCS, and standards for road construction should be clearly agreed and conditional as part of any award.

Alan Dickerson, Head of Civil Engineering Central Services for FC then led a brief discussion on the FC Technical Note: *Reducing Greenhouse Gas Emissions from Forest Civil Engineering*. Produced in 2013, the basic principle is that sustainable, low-carbon construction is also safe, economic construction. Good outcomes, said Alan, result from good planning and design – and of course, the opposite is true. At the planning and design stage, a phased approach was necessary, planning the route for the minimum road density and for efficient construction. Opportunities for reducing greenhouse gas emissions from civil engineering operations should be considered, using the reduce, reuse and recycle approach – for instance, reusing road material where possible and routing roads to avoid disturbing soils with a high organic content such as peat.

Alan then gave a comparison of five road engineering activities on the lifetime (125 years) CO₂e losses for the Eskdalemuir Village bypass project. Based on one construction phase, 250 regrading activities and a complete resurfacing every 7½ years, it was interesting to note the very large proportion of carbon dioxide (12,000 tonnes CO₂e) that is released from peat soil disturbance during construction compared to all the other activities. The carbon calculator used is available from Forest Research as an Excel spreadsheet.

Alan then ran through a list of dos and don'ts, in terms of good management practice. These are included in the Technical Note, which is free to download at www.forestry.gov.uk/website/publications.

Adriána Hudecz, who represented the Technical University of Denmark in Roadex IV, was speaking on the topic of low-volume roads adapting to climate change. Roadex partners undertook a review to establish what could be done to modify their current road construction and maintenance practices to meet predicted climate changes. In 2012 guidance was produced for local engineers to help them to manage the effects of climate change on their local networks.

Adriána then spoke about the possible impacts of climate change on road networks. These included disruption of the network by extreme weather events (rain, snow, high temperatures), damage to roads through deterioration, deformation and subsidence, flooding from rivers, seas and inadequate land drainage, severance of routes by landslides and avalanches, and damage to roadside infrastructure by high winds.

As Adriána pointed out, upgrading the road network is not always an option, so keeping road drainage in good condition along with frequent inspection and maintenance is needed. Immediate reaction to issues is essential. If necessary, restrictions on the size and number of vehicles using the route may have to be put in place during certain periods.

"Climate change is happening," said Adriána. "The idea here is not to invent some perfect, innovative solution which could solve all the issues with climate change, but to learn from each other's experiences."

Next speaker up was **Colin Mackenzie**, consultant advisor to the Highland Timber Transport Group. Colin explained that the *Tread Softly* best practice guide on the use of lower-impact timber transport vehicles builds on previous TTF publications such as the *Road Haulage of Round Timber Code of Practice* and *Managing Timber Transport: Good Practice Guide*. *Tread Softly* reflects a partnership approach as part of the process of improving quality and efficiency in the supply chain. It is not a prescriptive document, but the best available guidance.

The choice of wagon configuration is traditionally made by the haulier on the basis of lowest-cost tendering. Colin suggests that a more holistic approach to tendering is needed, to factor in road damage and other considerations. Two main problems on roads are edge damage and pavement and subgrade damage. Edge damage can cause water to get into the structure of the road – very expensive to repair once it has happened, but fairly straightforward to avoid by improving the articulation of the vehicle. To avoid subgrade

damage, the principle is to spread the load as wide as possible.

Colin talked delegates through slides showing various wheel configurations. It was clear to see that there is a huge difference in damage potential between the configurations (super singles versus double wheel). As Colin pointed out, "We aren't talking about trucks being slightly more damaging, we are talking about 2½ times more damaging."

Colin showed a decision matrix giving different types of road strength and type, suggesting the best configuration for each. In terms of damage to the roads, it is important that other factors are taken into account as well. We need to ensure that there are good standards of driving, that good training and management systems are in place, and that you always know where your vehicles are. It is pointless having the best wheel configuration if, for example, driver behaviour is compromising this.

Colin said that some councils have been specifying vehicle configurations and tyre pressure control systems for several years. Timber Transport Management Plans (TTMPs) were initiated by Argyll some years ago, and, whilst they have worked well and have been an excellent management tool, the difficulty is that they tend to be agreed between the agent and the council. It is important that the haulier is now engaged in this process. Haulier Quality Statements are an ideal way to drive the information right down the chain to the haulier. This statement requires the haulier to show how the required standard will be delivered.

Tread Softly, said Colin, sets out evolving good practice. He was pleased to note that the timber haulage industry has already stepped up to the plate. Even ahead of the *Tread Softly* document, investment has been made in the sort of equipment required to achieve best practice standards.

John Lyons, Technology Services manager with Coillte Forest, was the final speaker. With approximately 11% forest cover, split 7% to Coillte and 4% in private ownership, Irish timber production in 2012 was 2.84 million cubic metres (Coillte 2.35 million, private 0.49 million). Speaking of the haulage infrastructure, John said there were over 300 trucks in use. In terms of haulage management, Coillte own no trucks, but issue contracts to hauliers via a tendering system. Coillte manages haulage delivery to panelboard mills, and sawmills purchase standing timber via auction systems and engage their own hauliers. Some hauliers operate for both Coillte and the sawmills and there is increasing private sector timber supply, some to the firewood market, more suited to rigids and trailers.

In Ireland there is just one Forest Industry Transport Group nationally, with no regional structure. There is no direct funding, but they have accessed some research and consultancy funding through constituent members. Current areas of interest include the production of a Good Practice Guide for Timber Transport – an agreed routes project, which has secured €180k funding via University College Dublin for a two-year project which will look at nationally agreed haulage routes, taking into account Coillte's designated routes, the private forestry sector plantations, and the local authorities' road condition survey.

During 2012/2013, Coillte's in-cab technology project, jointly funded by Coillte (45%), Sustainable Energy Ireland (35%) and hauliers (20%), involved the installation of the Bluetree system in 225 trucks, with a similar number of trailers being fitted out. The system provides information on vehicle tracking, engine management and driver performance, and is integrated with Coillte information systems to improve timber security. Vehicles are under surveillance while in geofenced areas in the forest, and are tracked until offloaded and outside the mill geofenced area. Asset Forestry Logistics Ltd are working with Coillte on developing and piloting a centralised haulage dispatch system.

John explained that there has been an increased focus on the part of the Health and Safety Authority and the Road Safety Authority.

There is no doubt, said John, that the industry is undergoing significant

change. "We have a fairly stable cohort of hauliers, with an ageing fleet. However, we are also seeing improving technology, increased regulation, an increased focus on environmentally friendly haulage and increased communication with local authorities, all of which present challenges over the next couple of years."

Damage caused by frost heave.

