

By email to:
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Our Ref: CPHS2-ES&DR

9th July 2013

Dear Sirs,

HS2 - Draft Environmental Statement Consultation & Design Refinement Consultation

Introduction

The Inland Waterways Association (IWA) is a national charity which campaigns for the conservation, use, maintenance, restoration and development of the inland waterways for public benefit. IWA members' interests include boating, towpath walking, cycling, angling, built heritage, nature conservation, freight transport and the regeneration benefits of the canals and navigable rivers network.

This response is from the Lichfield Branch of IWA which covers (inter alia) parts of Staffordshire and Warwickshire. You will also be receiving a national representation from IWA and this response is consistent with that one, but includes additional details about the impacts of HS2 on our local canals and how these may be avoided, mitigated or compensated.

The canals around Lichfield affected by these proposals are the Birmingham & Fazeley Canal, the Coventry Canal and the Trent & Mersey Canal. These are historic waterways and valuable amenity and recreational corridors, providing leisure boating, walking, angling, cycling and nature conservation benefits. The HS2 route also impacts the Lichfield Canal which is under active restoration to provide similar public benefits.

IWA's Position on HS2

IWA accepts that the overall economic and social case for the proposed High Speed Rail network is for Government to make and for Parliament to decide.

If it proceeds it will have major adverse impacts on the local environment and quality of life of many people on its route, both during construction and operation, including impacts on the inland waterways infrastructure and users.

IWA considers that the project needs to be designed and implemented so as to minimise its impacts, to mitigate those impacts that cannot be avoided, and to fully compensate all those disadvantaged by its construction and operation.

IWA will therefore continue to seek engagement with those planning and implementing the project to identify the negative impacts on the waterways and to seek their avoidance, mitigation or compensatory enhancement wherever necessary. The waterways affected include both existing navigations and canals under restoration for which equal consideration and provision should be made.

CFA 20 Curdworth to Middleton

Birmingham & Fazeley Canal

At **Curdworth** the Birmingham & Fazeley Canal is crossed at a skew angle by a viaduct between Locks 5 and 6 of the Curdworth Lock flight, above White Bridge, a non-designated heritage asset. This 350 metre long viaduct also crosses Marston Lane and the adjacent M42, although the section over the motorway is confusingly labelled on most of the maps as Birmingham and Fazeley Canal Viaduct No.1, with the actual canal crossing being Birmingham and Fazeley Canal Viaduct No.2.

The photograph below shows the view down from Lock 4 by the Marston Lane maintenance yard to Lock 5 with Lock 6 and White Bridge in the distance. It is instructive to compare this with your widely publicised photomontage of the viaduct with a High Speed Train crossing the canal, although this is shown just above Lock 5 and in its correct location the viaduct will be about 9 metres (30 ft) above the towpath.



Knowing the width of the top of the lock (about 8 ft) it is obvious that the size of the train has been greatly distorted and reduced. The carriages appear to be only about 6 ft high and less than 30 ft long, even allowing for the skew angle. Whoever produced this image got their scaling seriously wrong and in reality the train will be at least twice the size shown. It will therefore be travelling at least twice as fast as in the much publicised video sequence from which this image is taken, with correspondingly greater visual and noise impacts. IWA considers that these misleading images should be withdrawn from further publicity and a public apology issued for seriously misrepresenting the visual impact of HS2 on the canal.

The visual impact on the canal of the viaduct and the trains is increased by the substantial embankment beyond the viaduct, the end of which is very close to Lock 6, and a new access road on the offside of the canal by Locks 5 and 4. Contrary to the assessment in the CFA20 report at 6.6.2 this will substantially affect the setting of the canal. This is confirmed by Tables 12 and 14 which acknowledge a ‘major adverse effect’ on views from the canal. A further inconsistency in the report is that the construction effects on the heritage assets of the canal are recognised at 6.5.5 but not the residual effects in 6.5.7. The setting of the canal here will be further altered and the present open views lost as a result of the extensive additional planting proposed alongside the embankment and new road (plan CT-06-113) and this would only be desirable if it contributes to noise mitigation.

The noise contour plan SV-01-57 shows very high values around the viaducts, affecting a significant length of the canal and adding to the already intrusive noise from the M42. These predicted noise levels are unacceptable and IWA considers that there must be additional noise screening provided on and adjacent to the viaducts to reduce this to more acceptable levels.

There will also be temporary noise and visual impacts from the two construction compounds adjacent to the canal by Locks 5 and 3 and screening to the canal should be provided to minimise this. The Birmingham & Fazeley Canal is a well used recreational facility and this should be recognised in the CFA20 report at 2.1.15. The report states at 5.5.18 that the towpath would be maintained in operation during construction but gives no similar assurance for the navigation. All construction work should be designed to minimise any interruption to traffic on the canal and use of the towpath and any temporary closure longer than 2 hours should be phased to take place overnight or in the usual ‘stoppage’ period between November and March (excluding Christmas and New Year).

It is of concern that the CFA20 report at 12.4.8 states that “The impact on usage of the waterways has not yet been assessed” and it is essential that this now be done in consultation with the Canal & River Trust (CRT) as soon as possible so that the proposed works and construction timetable can be designed to minimise their impacts.

The Lock Cottage at Marston Lane will be affected by land take, and the partial closure of Marston Lane and the new access road to be provided via Cuttle Lane will affect access to the canal and may impact on the use of CRT’s maintenance depot by Marston Lane Bridge. This should be listed as a road closure in Table 4 and not just as a footpath closure in Table 5.

The drainage discharge to the canal shown from the balancing pond will of course need CRT consent and may require additional work to overflow weirs at the locks downstream to accept potentially large intermittent flows into the short pound between Locks 5 and 6.

Lichfield Canal Restoration

At **Cappers Lane** the Lichfield Canal (part of the former Wyrley & Essington Canal) is currently under restoration by the Lichfield & Hatherton Canals Restoration Trust with support from CRT and Lichfield District and City councils. As a general principle, canals under restoration for future navigation should be treated in the same way as existing navigations and adverse impacts avoided, mitigated or compensated to ensure that there is no net disadvantage to the restoration programme.

The Lichfield Canal will be crossed at a skew angle by a 250 metre long viaduct directly above Cappers Lane Canal Bridge, which was reinstated in 2006 with ERDF funding.



Cappers Lane canal bridge on completion in 2006

A panoramic photomontage of a train on the viaduct above Cappers Lane (LV-12-65) gives an impression of its considerable visual impact, although the perspective looks distorted and unconvincing. Although the height is ample for navigation, the elevation will exacerbate the visual and noise intrusion and there should be additional noise screening provided on and adjacent to the viaduct to reduce this. There are concerns about the exact location of the viaduct piers in relation to the canal towpath and the detailed design should avoid any intrusion.

A temporary construction haul road is shown crossing the un-restored section of the canal west of Lock 30 and Canal Cottage and this may interfere with the restoration timetable. If this section has been restored before HS2 construction begins a temporary bridge over the canal should be provided. There will also be some disturbance from the construction compound on Cappers Lane which should be provided with appropriate screening. It is recognised in the report at 5.5.4 that due to construction disturbance the residents of Canal Cottage at Cappers Lane may need to be temporarily re-housed.

The suggestion at 9.6.13 of additional landscaping of an “extensive area” extending to the “disused canal” needs to take into account the intention that the canal will be restored within the timescale of this project.

Lichfield Cruising Club

The canal between Cappers Lane and Huddlesford Junction is already navigable and is used by Lichfield Cruising Club for moorings, but the impact of the scheme on the Club is only partly recognised in the CFA22 report (at 5.5.9 to 5.5.11 & 5.5.19). Access to the moorings, slipway and car park off Cappers Lane will be partly blocked by the viaduct piers and prevent the use of cranes for lifting boats so these facilities will need to be relocated.

The end of the embankment at the north end of the viaduct and its associated landscape planting will also permanently intrude on the Club’s offside moorings and, whilst the loss of land and disruption to the moorings during the 18 month construction period is acknowledged in the report (at 5.5.23), the ongoing operational noise intrusion thereafter will make these moorings untenable. The nearest boats, the 12 moored between the slipway and Watery Lane Bridge, will therefore need to be permanently relocated.

The Club owns some land nearer to Huddlesford Junction which would provide a suitable location to create a mooring basin for the displaced boats along with a replacement slipway and car park, and the expenses of this move should be fully funded by HS2 Ltd as compensation for their loss.

Under present plans Lichfield Cruising Club would also lose the use of an area of land at Huddlesford Junction for a construction site and as a long term common land compensation area. This would impact on their ability to hold events and the site is considered an unsuitable location for common land. Different areas of land should be identified which are more appropriate for both these purposes.

The small section of the canal infilled at Cappers Lane under the slipway and listed as potential contaminated land (at 8.4.11 & 8.4.14) will be bridged by the viaduct and there is therefore no danger of it contaminating groundwater (8.5.6).

Alternative Alignments Around Lichfield

IWA is aware that alternative alignments have been proposed through the Community Forum for the HS2 route around Lichfield which could result in a lower vertical profile. We understand that a deep tunnelling option has since been ruled out on grounds of expense and practicality but an alignment in shallow cutting passing beneath the A38 and West Coast Mainline railway (WCML) is still under active consideration. Whilst acknowledging that this could have environmental benefits for Lichfield and Streethay it may create additional problems for both the Canal Trust and the Cruising Club. It would presumably need a steep gradient between the WCML and Cappers Bridge which might require some change to the height or location of the canal crossing and possibly involve a diversion of the canal and/or Cappers Lane.

It must be understood that the canal level is immovable because it is the same as that of the Coventry Canal which is level between Fradley and Fazeley, a distance of 11 miles. The Lichfield Canal level might locally be raised by relocation of Lock 30, although that would be of no assistance, but it cannot be lowered. If any such alternative alignment is pursued it is essential both that there be detailed discussions with affected parties and a further period of public consultation.

Coventry Canal and Kings Orchard Marina

The **Huddlesford to Streethay** section of the Coventry Canal now enjoys a pleasant rural environment but the HS2 route will run on an embankment to the west, only 100 metres away near Steppingstones Bridge 84 (shown as Stoney Step Bridge on the HS2 plans). Additional long-term planting should be considered along this section to provide some noise reduction for the canal corridor.



Coventry Canal from Steppingstones Bridge

A surprise inclusion in the Draft ES, not revealed to the Community Forum, is a “Potential Temporary Materials Stockpile” occupying a huge area of land on both sides of the canal between the existing railway bridge at Streethay and Huddlesford, a distance of about 1.3 km (0.8 miles). The area includes and surrounds the new Kings Orchard Marina which has been under construction for the past 2 years and is now operational but is not even shown on the plans. The plans must be changed to exclude the marina from the stockpile area. Use of this area could last for 5 or 6 years and this would have a devastating effect on the environment and users of the Coventry Canal and the commercial viability of the marina.

Access for materials stockpiling would be from temporary railway sidings although there is no clear indication of their position or of how earth moving vehicles would cross the canal. The CFA22 report at 8.5.3 says material storage would be east of the canal but the plan (CT-05-125) shows it on both sides. The existing two canal bridges, Steppingstones Bridge 84 and King’s Orchard Bridge 85, are small hump-backed historic brick accommodation bridges entirely unsuitable for heavy earth-moving and construction traffic, and their heritage value should be protected. Temporary Bailey bridges or similar would need to be provided.

There is no information in the report of what type of material will be stockpiled or for how long, how extensive or high individual stockpiles may be, or what measures will be taken to suppress dust, screen operations from the canal, avoid unnecessary damage to landscape features, hedgerows, trees and wildlife or to ensure full reinstatement of the farmland on completion.

IWA expects as a minimum that all the existing field boundary vegetation should be preserved and protected, with stockpiling taking place only in between these features. There should be a 6 metre height limit on stockpiles, with dust suppression by water spraying, and any stockpile remaining for more than a few months should be grass seeded to prevent dust and minimise visual intrusion. The original topsoil should be stripped and stored separately to allow full reinstatement of the farmland on completion.

Depending on the extent and intensity of the operations and heavy plant movements, the Coventry Canal should be screened on both sides where necessary with semi-permanent earth bunds and/or noise fencing. Similar effective measures will be needed to protect the new marina from excessive noise and visual disturbance although, as the marina basin is embanked, fencing may be more practical than bunding.

Even with such protective screening in place, the residual impacts on the amenity and recreational use of the Coventry Canal and the marina will be significant. Boaters and recreational towpath users will be discouraged from using this section of canal with financial implications for many businesses dependant on canal users. Boat owners will be put off from taking moorings in the marina during the construction period and it may well be that the business is rendered unviable for that period, in which case appropriate compensation payments must be made. Reduced income to the marina may also reduce the income to CRT from the marina as this is usually related to the number of occupied berths.

The CFA22 report at 5.4.10 says the Coventry Canal towpath would not be crossed by the proposed scheme but it would of course need to be crossed as part of the temporary materials stockpile area. The report at 5.5.21 also says that “the towpath and canal routes would be maintained throughout the operation of this facility”, although it is not entirely clear from this wording if it means maintained in operation, i.e. without interruptions to navigation or towpath closures. This needs to be clarified. Again, the CFA22 report at 12.4.8 states that “The impact on usage of the waterways has not yet been assessed” and it is essential that this now be done in consultation with the Canal & River Trust (CRT) as soon as possible so that the proposed works and construction timetable can be designed to minimise their impacts.

The listed Coventry Canal Milepost south of King’s Orchard Bridge noted in the CFA22 report at 6.4.5 must be protected from any damage. IWA disagrees with the assessment of residual impacts on heritage assets at 6.5.8 that the Coventry Canal is of ‘low value’. It is a nationally important heritage asset encompassing many other listed structures.

Should the proposed alternative vertical alignment around Lichfield be adopted (see above) then the need for such extensive materials import and storage to build the embankments around Lichfield would be greatly reduced, and this temporary materials stockpile area could be dispensed with or at least significantly reduced in extent. In that case IWA would expect it to be confined to the area west of the Coventry Canal which would help in limiting its adverse effects.

Streethay Wharf Marina

There will also be some effect from the stockpile operations on the established Streethay Wharf Marina situated immediately on the other side of the South Staffs Railway. The railway embankment here will give some screening, provided that the height of stockpiling is limited, but there may well be disturbance from the use of the sidings. It is normal for boats in marinas to be used residentially at weekends and for other short periods, even when not occupying designated permanent residential berths. Noise screening for marinas should therefore be designed to the same standard as for housing.

Trent & Mersey Canal

The **Woodend to Fradley Junction** section of the Trent & Mersey Canal will be crossed by four HS2 bridges in close proximity, making this area one of the most adversely affected of all the canal crossings nationally. The visual impact and noise intrusion would damage the recreation, tourism and economic benefits of the canal

The 'refined' design (see below) still seriously affects the environment and heritage of the canal, especially the setting of Woodend Lock and cottage which are Listed Buildings within the Trent & Mersey Canal Conservation Area. The CFA22 report admits (at 9.5.10 and 9.6.10) that these would suffer 'significant' effects and the visual effect on Woodend Cottage is classified as 'major adverse' (Tables 13 & 15).



Woodend Lock and cottage, Trent & Mersey Canal

From west to east the HS2 bridges are:

- Phase 1 canal bridge about 100 metres north of Woodend Lock, with some difference in track levels, and cutting through Ravenshaw Wood.
- Phase 1 canal bridge about 600 metres east of Woodend Lock, with major differences in track levels, making this effectively 2 adjacent bridges at different levels.
- Phase 2 canal bridge about 150 metres further east, and about 500 metres above Shade House Lock, cutting through part of Fradley Wood. This bridge and sections of embankment on either side would be constructed at the same time as the Phase 1 bridges.

The cumulative effect of all these bridges, their associated embankments and other constructions including a transformer station and balancing pond would be to overwhelm and destroy the setting of the historic canal, its Listed structures and Conservation Area.

The view down the valley from the scenic and historically significant corner at Woodend, where the canal changes from an overall north-south to an east-west course, would also be drastically changed by the viaduct and embankments. The CFA22 report at 6.5.3 states that planting blocks would reduce impacts on the designated heritage assets, although at 6.5.5 and 6.5.8 it recognises that their setting would be significantly affected by the scheme and proposed landscaping, and at 6.6.2 that the historic views would be curtailed. Therefore the extensive landscape planting proposed would greatly alter the setting of the canal and can be supported only in so far as it assists with visual and noise screening.

The balancing pond shown adjacent to the canal has a rectangular outline of artificial appearance and should be reshaped to give a more natural look sympathetic to its setting.

Three construction compounds near the canal would be in use for 18 months whilst the embankments and 4 canal bridges (see above) are built. Due to construction disturbance the moorings above Woodend Lock would be temporarily displaced (5.5.12) and the residents of the lock cottage may need to be temporarily re-housed (5.5.4).

The noise contour plan SV-01-63 shows high noise levels at the canal adjacent to the viaducts and there should be additional noise screening provided on and adjacent to the canal bridges to reduce this to more acceptable levels.

IWA considers that the WCML link line with its double crossing of the Trent & Mersey Canal to the north and east of Woodend Lock should be realigned to the southwest to avoid the canal altogether and preserve its heritage and amenity value. This would have the added benefit of allowing a lower vertical alignment reducing noise and visual impacts in a wide area.

Ravenshaw Wood

Beyond Woodend the 'refined' route continues close to the Trent & Mersey Canal, cutting a swathe through Ravenshaw Wood an ancient woodland of high heritage value (6.6.4) which would be partly destroyed, and then continues to run close to the canal for some distance towards Kings Bromley Wharf.

Kings Bromley Marina

Although the HS2 link line is about 0.5km from Kings Bromley Marina its elevated position and viaduct crossing of the Bourne Brook could cause some noise disturbance. This can be mitigated by the proposed landscaping and planting with additional noise fencing across the viaduct. The Tewnal's Lane main compound will be closer to the marina and could cause further temporary disturbance which should be reduced by appropriate screening.

Route Changes around Lichfield

It is not clear why the Phase 1 HS2 route from London to Birmingham continues as far as Lichfield. Other possible links with the WCML such as Curzon Street to New Street seem not to have been considered, and no temporary link for through services to the East Midlands and Yorkshire is included. Lichfield seems to have become a fixed point at an early stage with all the various route options considered for Phase 1 converging there and all the route options for the Phase 2 line to Manchester starting from there rather than Birmingham which would have been more logical.

The first published route around Lichfield in March 2010 joined the WCML at Handsacre without crossing the Trent & Mersey Canal. But the route around Lichfield was amended in March 2011 following local protests about the original alignment which would have cut through the edge of the City. The amended route swings out beyond Streethay but then continues much further north than necessary, crossing the canal twice in close proximity, before curving back to join the existing WCML.

The legend on the HS2 maps and supporting documents at that time confirm that no account was taken of Conservation Areas in planning the route, which was a major deficiency and is partly responsible for the unacceptably aligned route at Woodend. By starting the westwards curve just north of the A38 crossing at Streethay the route could have passed through open land clear of other properties to join the existing railway further south, near the location originally proposed, and entirely avoid the Trent & Mersey Canal.

However, this amended route was drawn up with other serious design errors as it failed to allow sufficient headroom for navigation. After objections from IWA and British Waterways and a public consultation, the Government's decision to proceed with HS2 announced in January 2012 included further changes to raise the level of the line and also to allow for a junction with the Manchester line, even though the route of the line had not been announced at that stage.

The Review of Possible Refinements document stated that "The adjustment would result in marginally more noise and visual impacts, although this change would affect only a small number of people". This ignores the tens of thousands of boaters and towpath walkers annually who use the canal in this area. The changes also took the route almost directly above the lock and lock cottage at Woodend which are both Listed Buildings and IWA understands that the cottage was threatened with demolition. This level of damage to the canal environment around Fradley was not acceptable and amounted to wanton damage to a cherished part of our canal heritage.



Shade House Lock, Trent & Mersey Canal.

(HS2 will cross through the woods in the middle distance)

The announcement of the Phase 2 route to Manchester in January 2013 confirmed that this would start from the Phase 1 route just north of Streethay and added a further bridge over the Trent & Mersey Canal between Woodend and Shade House locks, creating three canal crossings within half a mile above Fradley Junction. It is

important that this bridge is kept as low as possible, consistent with CRT's 3 metre navigation headroom requirement, to minimise its visual and noise impact, and that it is well designed.

Design Refinement Consultation

In this latest change the junction for the Phase 2 line to Manchester is now included in the Phase 1 construction, including the bridge over the canal, and the northern end of the Phase 1 line has been realigned again to reduce the land take from development sites at Fradley Business Park, resulting in the previously announced double crossing of the canal being moved further away from Woodend Lock. The western crossing is now about 100 metres from the lock and cottage which is a marked improvement on previous alignments. However, the design of the grade separated junction results in the tracks at the other crossing being at very different levels, further increasing the visual impact and effectively creating 4 railway crossings in close proximity.

Despite all these changes, the alignment around Lichfield has obviously not yet been optimised and there needs to be a fundamental rethink on this whole section of the route, taking better account of heritage and environmental concerns.

Alternative Alignments around Woodend

The CFA22 report at 2.7.3 confirms that 3 alternative alignments are being considered affecting the Trent & Mersey Canal crossings at Woodend.

However, we understand that the tunnelling option has since been ruled out on grounds of expense and practicality.

The origin of the suggestion of diverting the canal to the north of the link line is not clear and IWA is strongly opposed to this alternative on heritage grounds. The canal is a Conservation Area throughout Staffordshire in recognition of its historic and industrial archaeological importance, and both Woodend Lock and Woodend Lock Cottage are Listed structures which together create an attractive and timeless scene of unique character. But the greatest value of the canal heritage is that it is a living heritage, with 240 year old structures still being used for their original purpose of navigation, and this is the whole basis of the amenity and tourism value of the canals and their considerable economic activity.

It would, frankly, be a heritage crime if the Woodend section were to be reduced to a stagnant, weeded-up, semi-derelict channel cut-off by railway embankments at each end from public access. We know that CRT shares our concerns about this diminution of the built heritage as well as their own practical concerns about maintenance costs and water supply issues. Furthermore, a new canal lock and channel running right alongside the railway for some distance would be subject to even greater visual and noise impact than at the two proposed bridges.

Therefore, the present route, despite its visual and noise intrusiveness, would be greatly preferable to the proposal for diverting the Trent & Mersey Canal.

IWA's Alternative Alignment

IWA submitted a plan through the Community Forum in November 2012 showing indicative alternative alignments between Handsacre and the A38 that would avoid the canal crossings altogether, which we understand is still being considered.

The link from Streethay to Handsacre is not 'high speed' and has tighter curvature to link to the existing WCML and is therefore less constrained in alignment. By starting the low speed S-bend link immediately after the A38 crossing at Streethay the double crossing of the Trent & Mersey Canal at Woodend could be avoided altogether. Using similar curvature to the present proposal alternative alignments between Streethay and Handsacre are possible that would avoid all the damaging effects on the canal without affecting other buildings or heritage assets.

This would leave only the single crossing for the Phase 2 line, greatly reducing the harm to the heritage and environment of the canal. It would also remove the level constraints of the canal crossings and thus allow for the route of the low speed link to the West Coast Mainline to be at a lower level with reduced environmental impact. That would then fit in well with other proposals for a lowered vertical alignment under the A38 and WCML, showing that diverting the canal is not the only way to lower the alignment around Lichfield and reduce the impact of the presently proposed high embankments.

Therefore, IWA considers that the railway link route that should be realigned to avoid the canal crossings altogether and that this is entirely feasible in this location.

Other Corrections

Note: In the Overview section of the CFA22 report at 2.1.28 it should be noted that the Coventry Canal is not part of the linear Trent & Mersey Canal Conservation Area, and 2.1.29 should refer to the Listed Buildings on the canals including Woodend lock and cottage which are directly affected by the HS2 route. In the Cultural Heritage section at 6.4.12 it should be noted that the Trent & Mersey Canal is not a non-designated asset as it is a designated Conservation Area. Plan CT-01-63 includes the legend “Woodend Lock (near)” which appears to relate to the location of the Listed canal milepost, although there is no labelling of the other Listed Buildings indicated on the plan.

Conclusion

HS2 will have significantly long term adverse effects on several parts of the canal system around Lichfield which should in part be avoided by route realignment (Woodend), mitigated by additional noise fencing (Curdworth, Cappers Lane and Streethay) and generally by landscaping and good design, and compensated by relocation of facilities (Huddlesford). Short term construction impacts should also be reduced by appropriate screening. The impact on usage of the waterways should now be fully assessed and minimised through sympathetic planning of the construction works and timetable.

In particular, IWA Lichfield Branch’s proposal for an alternative alignment that would avoid the Phase 1 route crossing the Trent & Mersey Canal twice must be fully evaluated and should be adopted.

Yours faithfully,

Philip G. Sharpe
Planning Officer
Lichfield Branch of IWA