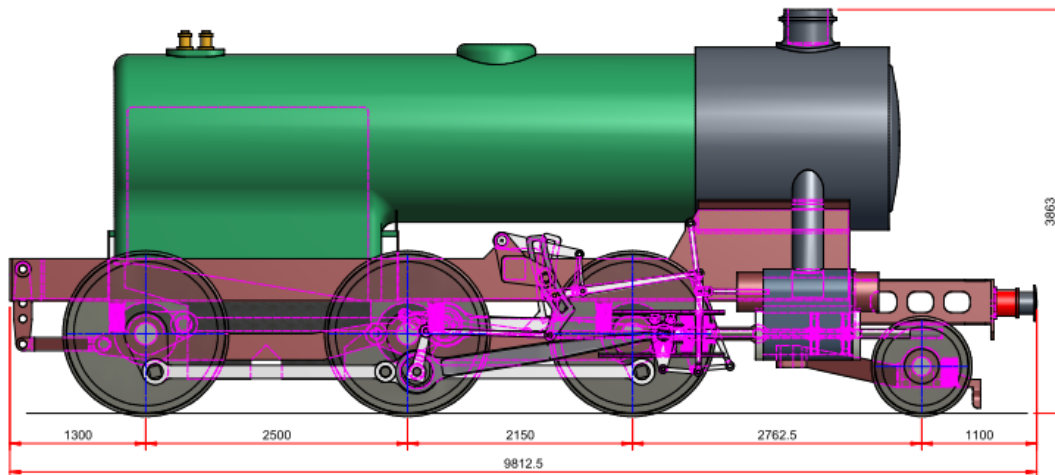


## “Revolution” Project Proposal by Jamie Keyte



### Introduction

At the 2018 October conference I presented an idea for a concept locomotive - aka [“Revolution”](#). The locomotive is intended to be built in modular form so as to provide a flexible form of motive power to ease the burden on the ageing fleet of preserved locomotives presently operating on preserved railways and secondary tourist routes.

A key part of the concept was to address some of the reliability and maintenance issues inherent to First Generation Steam locomotives and new-build replicas thereof. The two main ideas put forward were a novel form of axle location / springing and a modular boiler with water tube firebox, though other “Modern Steam” ideas were also included.

These ideas were incorporated into a 2-6-0 arrangement with narrow, deep firebox and round topped boiler. Emphasis was placed on a simple, reliable and cheap-to-build locomotive format of around Class 4 power rating, but capable of being up- or down-rated to suit the intended use.

Building a new full-size steam locomotive with novel features would be a difficult business, so a compromise between cost and functionality would be to build a locomotive of the same basic outline in 10.25” gauge (approximately 1/5 scale) – “Revolution 10”.

- Lower Cost
- Easier to build
- Lower risk
- Greater potential to experiment
- Over 50 tracks in the UK

## Proposals

Following agreement with the AST Committee the following proposal was put to the membership at the AGM on Saturday 2<sup>nd</sup> March:

1. Adopt the Revolution 10 project
2. Objectives:
  - Demonstrate the Modular Construction concept
  - Demonstrate the novel suspension and axle location proposal.
3. Test bed for:
  - Suspension and axle location
  - Exhaust systems
  - Active ashpan steam control
  - Exhaust gas cylinder heating
  - Alternative boiler types
  - Alternative fuels
  - Others?

It is envisaged that the form of the project would shift slightly from being a “demonstrator” to an experimental machine. It would form a test bed on which new ideas could be trialled at relatively low cost. Modular construction of the locomotive would make it possible (within reason) to “bolt on” different features and change the external outline.

### Benefits to AST:

- Means to try out new ideas
- Demonstrate ASTT design and build capability
- Opportunities *for more* to become involved
- Forge links with academic institutions
- Develop monitoring and logging techniques
- Practical experience in managing a project
- Stepping stone to bigger things
- Useful publicity
- Use for funds

It is also envisaged that there would be longer term benefits to the wider steam community:

- Better understanding of locomotive systems – e.g. draughting
- “Non-Intrusive” modifications to enhance reliability and performance of heritage stock
- Improved reliability
- Alternative fuel research
- New diagnostic tools for heritage fleet
- Ultimately – a new locomotive designed for the heritage industry

## The Next Steps

Such a project can only be undertaken with the support of the membership. There are many aspects to the support required including:

- Project management
- Fundraising
- Theoretical research and development
- CAD and design work
- Manufacture and assembly

But before any of this work commences it will be necessary to precisely define the scope of the project and test its feasibility. To set the ball rolling it is proposed to have a Kick-off meeting on **Saturday 30<sup>th</sup> March**. The meeting will be held at a venue to be announced.

We would like to invite anyone who is interested in contributing to the project to attend the meeting. Please let John Hind know as soon as possible if you are interested in attending. It is appreciated that not everyone who has an interest will be able to make it, so if you would like to contribute to please you could let us know which of the above areas you could support.

In the coming weeks an agenda and some notes will be circulated to those expressing an interest.

J Keyte

03/03/19