ROSE CITY GARDEN RAILWAY SOCIETY

NEWSLETTER

See our Web page at http://www.rcgrs.com/

February 2006

RCGRS Annual Meeting

Notes from the minutes of Secretary Barbara Clark

New members and visitors were introduced.

Carolyn Rose introduced the Jig Stone™ molds. A Motion was made (M–Gary Lee, S–Marion Snyder, Passed) that all 3 Patterns (3 molds per Pattern–1 box per Pattern) of the Jig Stone molds, purchased by the Club, are to be checked–out as 3–box set to one person for one (1) month for a fifteen dollar ($15.00) deposit.

Darrel introduced the "SIG" (Special Interest Group) Committee track module project. A Club "Proposed Module Specifications" (dated 1/14/06) sheet was handed out to all present. The SIG will build the Corner Units. Members were encouraged to build some Straight Units. A sign–up sheet was sent around for members that want to participate in the building of additional track modules. Work sessions to be held at Gary Lee's business. It was discussed that the SIG should be able to build four complete Corner Track modules for the $500.00 set–aside last year.

President Darrel Dunham suggested ways to improve the Club for members:

- Shadow new members
- Name Tag (drawing if name tag worn)

Other potential SIG Modules:

- Scheduled Operating Sessions
- Live Steam
- Open Houses – at least one scheduled definitely on the 2nd Weekend of every month Sat/Sun. Other open houses could still be scheduled for other times.

Other member suggestions:

- phone committee/tree to continue
- Questionnaire for new members

Members, please e–mail President Darrel (DWDunham@MSN.com) regarding any additional ideas.

The following Board Members were presented with Plaques for their service:

- Dennis Peoples
- Dennis Rose
- Marion Snyder
- Gary Lee
- A plaque was also presented to Allan Warrior for his great on–going job for providing the Club newsletter.

Carolyn Rose provided some details about a potential Alaskan Tour in addition to the Club tour scheduled for 2007. Anyone interested see Carolyn.

National Garden Railroad Convention will be held in Santa Clara on July 3–9th. Darrel is willing to caravan with a stop–over at Train Mountain near Chiloquin, OR. Anyone interested see Darrel.

A Motion was made, by Dennis Peoples and seconded by Don Golgert, to pay the Columbia Gorge Railroad Club twenty five dollars ($25.00) for the use of the building. Thank you Columbia Gorge!

HELP – A Banquet coordinator for 2006 is needed.

Meeting was adjourned at 9:30p.m..

Gordon Pisle discovers an ancient Aristocraft "Rogers" locomotive in good condition which he found at a garage sale

Kathryn Warrior tends to her knitting during the meeting.

Modular SIG

By David Kooken

At the RCGRS January, 2006 meeting held at the Columbia Gorge club house President Darrel Dunham and Yardmaster Gary Lee demonstrated a prototype modular table unit that had constructed for use at shows such as GATS. Upon approval from the club, President Darrel asked for the formation of a SIC (Special Interest Committee) to proceed with the construction.

Prototype module for a corner

The committee volunteers met for breakfast January 21st where some preliminary discussion took place. Then, moving to Gary Lee's workshop, and with everyone getting a chance to give input, an hour's discussion resulted in two conclusions: One that we needed to start building the modules in order to have the experience that would move us from the theoretical to the practical, and two, Dave Kooken was to be the Modular Committee chairman.

Moving into the work area were Darrel Dunham, Jeff Lange, Gary Lee, Steve Cogswell, Jerry Clark, Dennis Peoples, Dave Kooken, Don Watson, Dennis and Carolyn Rose, and Joe Jones. With their skills, interest and enthusiasm the group moved far beyond the hoped for goal of four tables and by the end of the day had completed the woodwork on all eight corner modules.

As this is written, there is still much work to be done to prepare the tables for use at the February Train Show, but currently the Modular Committee is ahead of their goals.

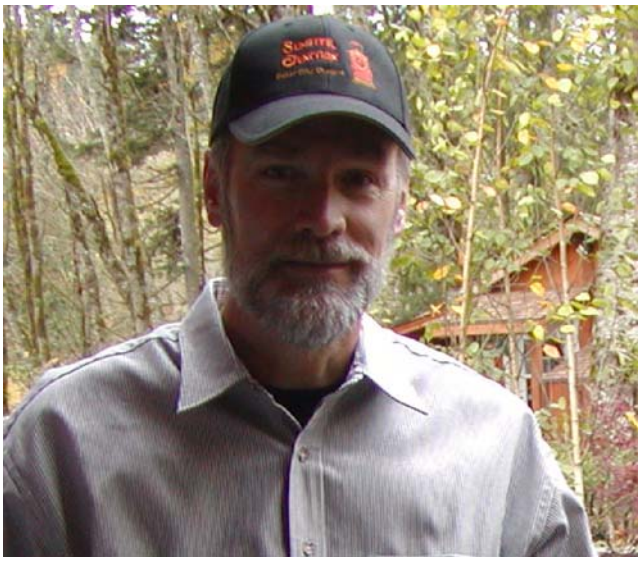
Left unanswered at this point are a number of questions regarding whether or not individual members will have some sort of access to modules such as constructing a diorama. Keeping in mind that the committee must control the ends of each module because they must line up exactly with any other

module there still should be some room for individualism. The Committee priority is to get all eight corners wired, all hardware added, the track mounted and the tables painted, well before February 17th. When that is done, the Committee hopes to turn their energies toward establishing standards that will permit the participation of any RCGRS member who wishes to construct scenery.

Since the committee was formed from those present at the January RCGRS meeting, we have little knowledge of other members who might be interested in the modular aspect of Garden railroading. If you are such a member, send an e–mail to Dave Kooken at dmkooken@pacifier.com

2006 – 2008 RCGRS Officers

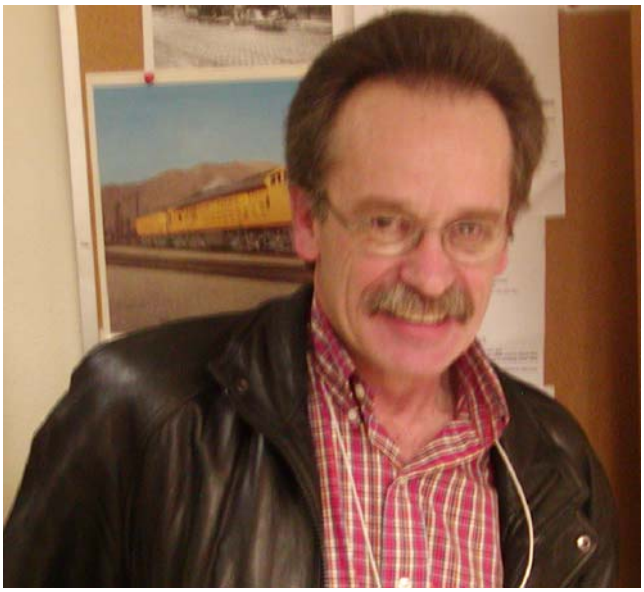
President: Darrel Dunham
dwdunham@msn.com



Vice President: Jeff Lange
jeffdlange@comcast.net

Secretary: Barbara Clark
clarkdani@comcast.net

Treasurer: Steve Cogswell
scogswell@tkw.com



YardMaster: Gary Lee
garylee@constructavision.com

Diesel Engines

By Allan R. Warrior

Introduction

What do submarines have to do with modern railroad locomotives? Quite a bit as we shall see. It is my intention to discuss diesel engines and locomotives in a series of articles and perhaps raise the appreciation, understanding, and identification of these newer energy converters. In order to better understand the development of diesels, a little history of the development of submarines is in order.

Model railroaders have had a long appreciation of models of steam locomotives and like to see them operate on their layouts. Perhaps one of their allures is their open piston rods, connecting rods, and valve gear which adds interesting action to the operation. There is also the possibility that steam locomotives have had a "macho" effect where a man had control over the operation of such a large fire breathing monster. However, they are inefficient converters of heat energy to mechanical energy in the range of less than 8%. They also require considerable maintenance after as little as a 100 mile run.

The theory of reciprocating internal combustion engines date as far back to 1862 by Beau de Roches in France. Nicolaus Otto invented the first practical internal combustion engine in 1876 that employed a 4–stroke cycle of operation and used gasoline as fuel. The descendents of this invention are in use all over the world. Internal combustion engines have a theoretical conversion efficiency of a maximum of about 32% but the practical efficiency is somewhat less (but much better than steam).

In 1893, Dr. Rudolf Diesel, a Bavarian scientist patented a design that used a different thermodynamic principle for an internal combustion engine. Dr. Diesel was a better scientist than an engineer. His first attempts used coal dust as a fuel which resulted in unexpected explosions and a failed model. A successful engine using only his theory and first design was never produced. In later developments, Dr. Diesel was able to demonstrate a successful model that operated on 100% peanut oil.

Other engineers realized the practical elements in Dr. Diesel's cycle of operation and experimenters began to achieve favorable results by eliminating some impractical elements in the design and operation. A German Firm called Machinen–fabrik–Augsburg–Nurnberg (commonly called MAN) developed a successful diesel engine using liquid fuel. This development had ominous results in WWI!

Gasoline on board a boat or ship is extremely dangerous. Storage is difficult and the fumes tend to accumulate in low places and cause an explosion. There have been many fatal shipboard accidents caused by gasoline. The first United States subma-

rines used gasoline engines and were very dangerous contraptions.

The MAN engines were used in the German U–boats during WWI and were quite successful and damaging to the Allies. Some of the US submarines were equipped with a MAN designed (under license) engine during WWI. After WWI, the US Navy adopted MAN designs for use in all of their diesel submarines.

A new design problem had to resolved. The first diesel powered boats were direct drive from the engine to the propeller. Internal combustion engines are known as a class as "constant speed engines" which means that they can only operate in a relatively narrow range of rotational speeds. The rotational speed required by the operation of the engine did not match the rotational speeds required by the propeller. This restriction on engine speeds made operation of the boat very difficult and inefficient. Two problems had to be solved:

- How to power the propellers and yet separate engines and propeller shafts so that no direct mechanical connection was needed.
- How to design a drive in which the different and varied rotational speeds could be selected for both the engines and the propellers.

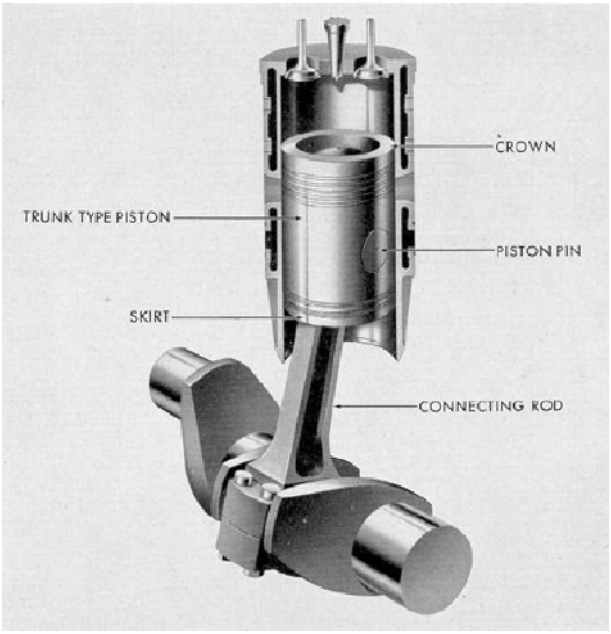
Several designs and schemes were tested, but the design that best solved the two problems is the ***diesel–electric drive***. The diesel engine drives a generator and the generator drives the electric motors connected to the propeller shaft. The speeds of the engine and the electric motors can be independent of each other. This design is used in most of the very large motorized equipment used today.

Diesel engines can be either 4–cycle or 2–cycle designs. 4–cycle engines have an air charge stroke (down), a compression stroke (up), a power stroke (down), and an exhaust stroke (up). This engine design is used in many trucks and cars.

2–cycle engines use a blower to eliminate exhaust gases and air charge the cylinder at the same time. The compression stroke raises the air temperature to very hot and the fuel is spray injected as the piston approaches the top of its stroke. The very hot compressed air causes the fuel to ignite and create the power stroke. This engine design is used in diesel powered submarines since 1930 and in modern diesel locomotives.

These articles are not to be a treatise on diesel engines and design and I have passed over a tremendous volume of engineering design and historical data at this point. For those of you who want more data on diesel engines are encouraged to surf the WEB. There is an overwhelming amount of information available.

There are two basic designs of diesel engines that are of interest to railroad enthusiasts: the Winton/General Motors single–acting design and the Fairbanks–Morse opposed piston design. Single acting design means that the power stroke only occurs on one side of the piston. The opposed piston design is single–acting but has two pistons in the same cylinder.



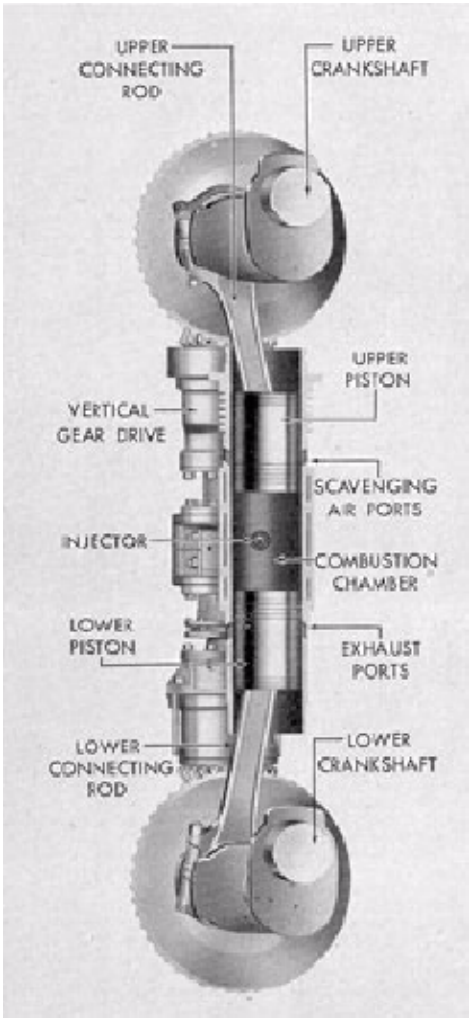
Single–acting Diesel Principle.

The Winton/GM [later Electro Motive Division (EMD)] diesel designs are the largest population of diesel engines in use today on railroads. There are some other diesel manufacturers that serve niche markets.

The Fairbanks–Morse diesels are 2–cycle and have two crankshafts. The crankshafts are connected to-

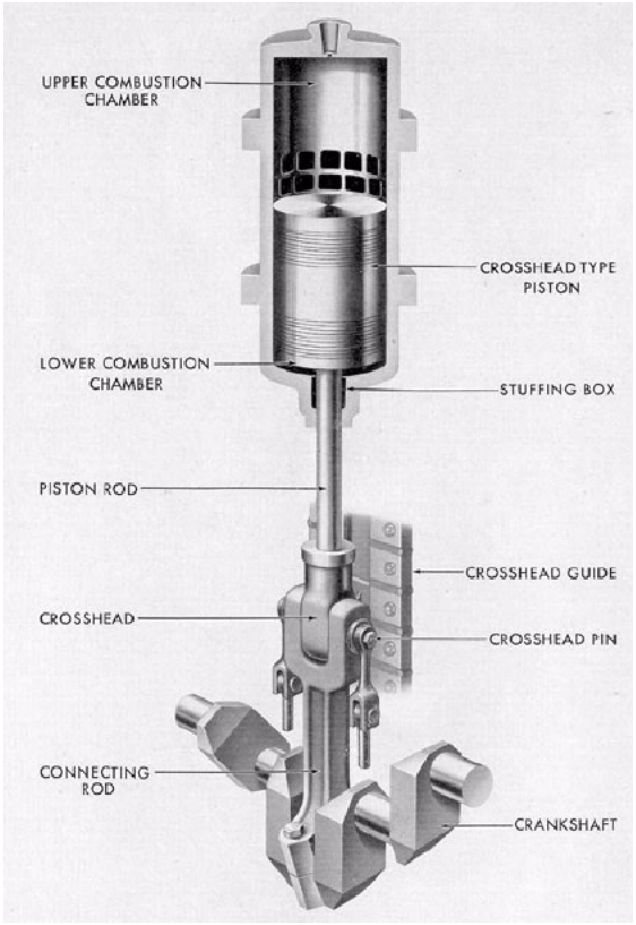
gether by a vertical gear drive. There are two pistons in the same cylinder. They are excellent performers and had a good history in submarine use. The opposed piston engine has three advantages over other comparable diesel designs:

- Higher thermal efficiency (more economical fuel usage).
- Elimination of cylinder heads and intricate valve mechanisms with their cooling and lubricating problems.
- Fewer moving parts.



Fairbanks–Morse opposed piston design

The Fairbanks Morse 10–cylinder engine is a very clean looking package.



There is a double–acting diesel design by MAN that is not used in locomotives.

(Next month; Early Diesel Locomotives)

Cruising

By Burt Kantor & Marion Snyder

Burt and Marion made a Christmas cruise that included a train trip across the Isthmus of Panama. The Panama Railroad was built beginning in May 1850 and completed on January 28, 1855 at a cost of thousands of lives of the laborers and a total expenditure of $7,407,535.00.

Panama had been known as a pesthole since the earliest Spanish settlement. But the horror stories to come out of Panama as the railroad was being pushed ahead mile by mile quite surpassed anything heard before. Most of the deaths were from yellow fever, but there was also cholera, dysentery, and smallpox and the “body count” was so high that it was difficult to find places to put the bodies. Local Comment: “Every tie in the Panama Railroad represents the life of some man who paid the price of its construction with his life.”

The railroad is a 47.6 mile line which links the two oceans. There are 170 bridges and culverts of 15 feet or more, 134 bridges and culverts of less than 15 feet, a statistic that gives some idea of the difficulties there had been in making headway in such half–drowned country. It took a year to build a causeway across a swamp that was 180 feet deep. The investors in the US had originally allocated one million dollars to build the railroad and did not understand why it was taking so long and so expensive to build a measly 47.6 miles of track.

The railroad was being built at the time of the great gold rush to California. There was only 7.5 miles built when hordes of men anxious to get to the gold fields descended on the railroad and demanded a ride across the isthmus. The railroad charged an astronomical price of $25 per head for a ride to the end of the track or $10 for the right to walk the right–of–way which ended in an almost impassable jungle.

The Panama Railroad is possibly the only line in the world that literally lifted itself up by its own shoelaces. The funds allocated by the investors had been used up. All during the gold rush, miners were taken as far as the end of the road and then continued the journey on foot. The same high fares were in existence for years. Why reduce them? The passengers never complained! This income permitted the construction to continue. By the time the road was finished, nearly a third of its tremendous cost had already been liquidated.

The Panama Canal could not have been built without the railroad. The railroad had to be updated and significantly rebuilt to double track so that the Panama Canal could be built. All of the transportation requirements were met by the railroad. The long trains of spoil were loaded by the steam shovels digging the canal and had first priority on the tracks. Trains involving parts, equipment, supplies, and laborers all had less priority. The Panama Canal was completed in 1912. A very interesting history of this railroad can be read at
http://www.trainweb.org/panama/history1.html

From the Atlantic to the Pacific, from standard passenger car and its elite dome car to container freight flatcar, that is the description for the Panama Railroad. During the daylight hours it serves as transportation for the cruise ship passengers and as transportation for the locals moving about the canal area. At dusk it becomes the land transportation for the containers that have been off loaded from container ships.

Burt Kantor enjoys the ride.

The interior of the coaches had been redecorated in style from the 1920 era. Unfortunately we were unable to purchase tickets for the elegant dome cars.

It was Christmas time and Santa visited the train without his reindeer.

RCGRS Officers

President, Darrel Dunham 503-697-4738
dwdunham@msn.com
Vice President, Jeff Lange 360-696-0799
jeffdlange@comcast.net
Secretary, Barbara Clark 360-737-0176
clarkdani@comcast.net
Treasurer, Steve Cogswell 503-650-4682
scogswell@tkw.com
Yardmaster, Gary Lee 503-695-2550
garylee@constructavision.com

Schedules & Timetables

Make sure you check the calendar on our Website at **http://www.rcgrs.com/** for the most up-to-date schedules and timetables.

Anyone interested in having an Open House or sponsoring an event, please contact **Donald Golgert at 360-896-1778 or grammabob@wa-net.com**.

February 18 & 19, 2006, Saturday and Sunday, Spring 2006 Great Western & Atlantic train show. The show will be at the Exposition Center. Many of our members will be needed to help.

(1) The setup would be on Friday night February 17, 2006. Everyone is needed and would be welcome so we can get set up and out of there (17:00 hrs to 21:00 hrs or 5:00 P.M. to 9:00 P.M.)

(2) There will be 8 hours of operation on Saturday 18 and Sunday 19, 2006. We need at least 2 members to run trains on the mainlines and 1 or 2 members to do switching problems and talk to the public at all times. Members can sign up for more than one slot of an hour.

(3) Sunday, February 19, 2006 after 16:00 hrs or 4:00 P.M. Help is needed to take down and put away the modules.

July 3 - 9, 2006, National Garden Railway Convention, Santa Clara, California:
Web Site: www.bagrs.org/convention/index.html

Editor's Note: awarrior@comcast.net
Pictures and articles are eagerly sought for the newsletter. Help keep your newsletter interesting by submitting materials that can be printed and shared with our members. **The deadline for the March newsletter is February 25, 2006.**