

Railroad Time Table

Arrival and Departure of Passenger Trains

Woodburn-Springfield Branch
WEST SCIO

North 7:50 a.m.
South 5:31 p.m.

Corvallis & Eastern
MUNKERS

To Albany 7:25 p.m.
From Albany 9:22 a.m.
Motor to Mill City 7:05 a.m.
" from " 4:21 p.m.

§ Daily except Sunday

Auto bus leaves Scio postoffice
7:10 a.m. & 5:00 p.m. for West Scio
8:15 a.m. & 1:30 p.m. for Munkers

Federated Church

SCIO, OREGON
Sunday School 10 a.m.
Preaching 11 a.m.
Christian Endeavor 6:30 to 7:30 p.m.
Song Service 7:30 to 8:00 p.m.
Prayer Meeting, Thursday 7:30 p.m.
Brother Meikeljohn, Leader.
H. B. Iler, Pastor

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ARMORED VESSELS

How the Great Steel Plates That Protect Them Are Made.

A SEVERE TEST OF SKILL.

The Various Processes That Produce the Conflicting Properties Necessary in These Modern Projectile Resisting Warship Jackets.

Only armored warships could live in a naval battle with modern big gun projectiles in use, and hence the making of armor plate has become a science. The manufacture of armor plate has developed considerably in recent years, and in no branch of the steel industry is there greater opportunity for engineering and mechanical skill, coupled with metallurgical knowledge, than in the operations of forging and rolling, followed by the exact heat treatment essential to produce the almost conflicting properties necessary in modern armor.

The plate must be hard, glass hard, to resist penetration by heavy projectiles moving at tremendous velocities, yet tough and fibrous enough to take up the momentum without cracking or distortion. Mechanically, then, the plate must have an extremely hard surface and a fibrous backing. These requirements were attained in part by the old compound armor. Molten steel was poured on to a wrought iron plate and cooled. The slab was then reheated, forged and rolled to the required dimensions. If the operations were successfully carried out the line of demarcation was scarcely visible.

Recently a modification of this process was introduced to cheapen and render less tedious the production of armor. A layer of hard steel was poured into a cooled mold, the underside quickly setting. On the still fluid or pasty surface a thick layer of soft steel was poured. By careful manipulation the union of the surfaces was almost complete, and it was impossible to detect the break in composition on viewing the fractured section. This method of manufacture was undoubtedly an improvement on the old compound method.

The increasing size, velocity and hardness of modern armor piercing projectiles have necessitated the introduction of the modern armor. The process of manufacture essentially consists in case hardening to a depth of about two inches the surface of a homogeneous tough nickel chrome steel. Special air or self hardening nickel and more complex steels are used for lighter armor, gun shields and cast armored structures.

The steel is made in Siemens furnaces and carefully cast into ingots up to eighty tons in weight. These ingots are then slabbled under powerful hydraulic presses (18,000 tons) or rolled direct to the required dimensions, depending on the power of the mills and appliances. During the rolling operation, which lasts about an hour, the slab is reversed and inverted to attain uniformity of working, and scale is removed by wood fagots and water jets. After rolling the plate is usually quenched.

The next operation is that of case-hardening, and in this two plates are put face to face, separated by a layer of the carburizing reagent if it be solid, or if gaseous hydrocarbons be used the plates are slightly separated, to allow free passage for the hardening gases, by bricks arranged in rows. The plates are maintained at redness in a car furnace for three weeks and withdrawn after the hardening carbon has penetrated to the required depth. The plates are thus carburized and so made capable of being hardened, but they are not yet actually hard. At this stage all holes are drilled and plugged, and any bending or machining necessary is carried out.

From this point onward the treatments differ. Some makers insist on heating and quenching in oil or water to remove any coarse structure that may have been formed during the long annealing while carburizing. The next essential operation is that of hardening, and this is usually carried out in one of two ways. Either the plate is uniformly heated to the hardening temperature and quenched by a series of water jets playing on the upper surface with sufficient force to prevent the formation of steam or by a process known as "differential quenching," by which the carburized surface is heated to a temperature from which it will harden and the under side kept well below, so attaining a gradual fall in temperature from the top to the bottom. The whole plate is then immersed in water, the hotter surface alone being hardened, while the back is toughened. Further mechanical operations can be carried out only by grinding or cutting with oxyacetylene, as the plate has now undergone the treatment conferring maximum hardness.

In resume, it will be noted that there are three distinct operations in modern methods of manufacture—the mechanical

working of the plate to the required dimensions, the carburization of the surface, quenching the carburized surface to harden it. These operations call for exact manipulation, supervision and control, for the skill of the engineer and metallurgist may be put to the severest tests, not of the laboratory or the testing machine, but out in the "gray mists," when failure of a unit may imperil the safety and cohesion of the whole.—Chambers' Journal.

KNOW THE CAR'S LOAD.

Method by Which a Motorist Can Get the Best Tire Service.

"Perhaps the greatest and most important thing a motorist should know about a car is its weight with the average load carried," says an expert. "By knowing the weight of his car when loaded ready to run the motorist is in a position to regulate his tires so that they not only act as the best shock absorber obtainable, but are fit to offset any injuries which may come from over or under inflation."

"With the weight of the car known when preparing for a trip which includes passengers it is very easy for the motorist to regulate his air pressure in the tires so that they will run with the least injury to themselves. This foresight will also prevent a break in the side walls caused by an overload."

"With the weight of your car, plus the weight of gasoline, water and extra tires, with the weight of the passengers added, you have the total running weight of your car."

"For a quick way of determining what air pressure you will carry in your tires if you have no regular table of inflation the following table is suggested:

"For three-inch tires divide the weight of the load by thirty-two."

"For three and one-half-inch tires divide the weight by forty."

"For four-inch tires divide the weight of the load by forty-eight."

"For four and one-half-inch tires divide the weight of the load by fifty-six."

"For five-inch tires divide the weight of the load by sixty-four."

"For five and one-half-inch tires divide the weight of the load by seventy-two."

"To further illustrate the working out of the above table suppose your car weighed 2,880 pounds and you are using four-inch tires. From the above we find that for four-inch tires the weight of the load should be divided by forty-eight. This will give you sixty pounds air pressure, which should be carried in your tires. The tire mileage will be greatly increased if the motorist will regulate his air pressure by the load he carries."—New York Sun.

Drained Soils.

Heat is the chief essential for plant growth, and one of the principal factors in making soil warm is good drainage. The surface soils of well drained lands are almost invariably several degrees warmer than those of poorly drained lands. Drained soils also warm up faster after cold spells and much earlier in spring. It is certain that dynamiting heavy soils will pay.

CHARM OF FLOWERS.

Gardening is a Hobby That Becomes Akin to a Passion.

Barring the equally ancient and alluring pastime of going a-fishing, no hobby has a stronger grip on its devotees than gardening. At 4 o'clock of a summer morning Celia Thaxter could be found at work in her radiant little island plot, a sister in spirit to old Chaucer when on his knees in the grass at dawn to watch a daisy open. And these were not exceptional, not extraordinary, cases of devotion. They were merely typical exponents of the true gardener's passion.

Nor is this tense enthusiasm fleeting. Not in the least. It is not more transient than the bibliomaniac's passion, no more evanescent than the collector's zeal, which only death can quench. It is no sudden, youthful fervor, indeed, it is rarely found in youth at the storm and stress period, while it may be observed to be strongest in those for whom the days of wild enthusiasm are over. The bachelor clergyman or the quietest of spinsters, for whom other passion is nonexistent, will yet lavish on their gardens enough devotion to have won the heart of the most obdurate of persons, enough tenderness to have sufficed for the mothering of a dozen little ones. A garden is the world of the recluse, the passion of the lone man or woman, the diversion of statesmen, the recreation of poets and artists of all ages, except perhaps musicians, who may be over-careful of their hands.—Frances Duncan in Scribner's.

Plan of the Ball Field.

In the Woman's Home Companion C. H. Claudy says:

"Whoever did the calculating for a baseball field made a fine job of it. It takes just so long to run from plate to first, and it takes just about that long, less a tiny fraction of a second, for the average ball to be fielded by the average shortstop and hurled down to the big mitt waiting for it. The least slip, hesitation, fumble or wait, and the umpire is going to spread his hands palm down for a 'safe.'"

Sip Hot Water to Relieve Coughing.

Persons chronically ill, especially those suffering from consumption, have sudden and wearing attacks of coughing. In an emergency, the Medical Fortnightly says, hot water will often prove very effective. Water is much better than some of the remedies which disorder digestion and spoil the appetite. Water very hot, almost boiling, should be sipped when the paroxysms come on.

Doesn't He, Though?

Bach—Confess, now, Henry, you don't pay as much attention to your wife as you did before you were married? H. Peck—Lord, yes! I mind twice as quick now.

Not Necessarily.

"The face is the index of the mind, it is said."

"Oh, I don't know. Because a woman's face is made up 's no sign that her mind is."

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THE SCIO TRIBUNE

May Day Program Friday, May 4

COMMENCING AT 10 A. M.

Schools participating are the Scio Schools the Jefferson Schools, Riverside Schools, the Oakview Schools

EXERCISES AS FOLLOWS

May Day Pageant, May Pole Winding, Raising of the Municipal Flag, Address, Music, Etc.

Lunch

Athletics at the Fair Grounds at 1:30.

Basket Ball, Tennis, Croquet, Pole Vault, 50 yard Dash, Shot Put, 100 yard dash, 440 yard dash, High Jump, 220 yd. dash, 680 yd. race, Broad Jump, 880 Relay Race, Javelin Throw, Base Ball Throw, and One-half Mile Free For All Race Concluding with a Base Ball Game

If it rains the program will be postponed until the first bright day following, except the municipal flag raising, which will occur at 11:30 May 4