

SIDELINES

BY LEONARD ELGENSON

Spain has been the testing ground for modern weapons of war for two and a half years. The bomber and attack plane have taken the acid test. By means of high flying military airplanes the civilian population of Loyalist Spain has been exposed to frequent air raids. Bombings have not destroyed the morale of the people but seemed to strengthen and anger them against the opposing forces.

No terrific loss of life or great damage to property has resulted thus far, in spite of the fact that Madrid was subject to more air raids in two weeks than London had through the entire world war.

The effect of terrorizing the civilian populations of the large cities has worn off and the people consider the air raids as just one more unnecessary and unavoidable evil resulting from war. In fact pictures have been published in the newspapers and magazines showing residents of Madrid casually going about their business while enemy bombers fly overhead preparing to drop 500 or 1000 kilogram "eggs."

Anti-aircraft guns make it necessary for the slow flying bombers to keep an altitude of 15000 feet or more. Arguments may be presented pro and con on the efficiency of anti-aircraft fire, the facts stand that the bomber still keeps a good bit of atmosphere between the ground and itself. High altitudes are not highly conducive to accurate bombing because the various air strata may vary in velocity and direction. That is why the civilians do not run for shelter as soon as they see a fleet of enemy bombers overhead. It is not guaranteed that the observer will stay in the same spot if a bomb lands within a few feet of him.

Bombing of troops on the march is a more efficient way to damage the enemy. Since the large bomber is not highly maneuverable and must keep its distance it is not feared to any great extent. The type of machine that puts fear into the hearts of the ground troops is the dive bomber or attack plane. Flying at low altitudes it comes into sight very quickly. The sudden appearance gives the man on the ground very little warning or time to take any measure of safety.

The attack plane is a high speed airplane with extreme flexibility of control. Standard equipment includes four 30 or 50 caliber machine guns mounted at a downward angle of forty-five degrees in order to spray ground troops with lead slugs. In the fuselage or under the wings is located bomb racks capable of holding four to eight 25 pound demolition bombs. These bombs explode at the surface and spray the landscape with steel for many yards around. This equipment is used by the Loyalists against Franco. It is highly effective in surprising troop concentrations, causing a frightful slaughter with a resulting demoralization which could easily decide a battle.

CHEMISTRY—

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used. Test tubes hold 60 milliliters, while centrifuge tubes hold one to three milliliters. Precipitation is accomplished by filtering and evaporation, a long process of sometimes two or three hours. The centrifuge system of micro-analysis takes only two or three minutes at the most.

Semi-micro analysis is, at the present time, standard in only a few colleges. It was tried out here during last year's summer session, and according to Dr. Van Atta, chemistry instructor in charge of laboratory work, has many advantages over the old method, macro-analysis. It features the minute apparatus, the small portions of materials, and the general theory of micro-analysis. The work is so planned, however, as to avoid the long, tedious methods of micro-analysis without appreciably sacrificing accuracy.

Introduction of this method is expected to result in considerable money saving for both school and students. The surprising durability of the minute apparatus eliminates much breakage, a hazard which formerly played havoc with the student pocketbook. The use of small quantities of chemicals will, of course, save the school much money.

Subway Engineers Award Contracts For Second Tube

Work on Chicago's new subway is progressing rapidly. At present a pit twenty-five feet in diameter is being excavated on State Street south of Chicago Avenue. Locks are being built for pilot tubes to State street.

The second contract, which involves the work on Clybourn avenue, has been let. Out of approximately eleven contracts for the subway eight will be let by January of 1940. Two hundred engineers are employed so far. Some of the most important problems they have to consider are: protection of buildings and crossing of the river at La Salle street. The street cars run through a tube under the river on La Salle Street and it is not definitely known whether the subway engineers plan to tunnel under the tube or not.

There are surveying parties out continuously running levels before and after tunneling in order to determine whether there has been settlement of any building. Some of the curves which are necessary in order to get around the larger buildings will have a large radius of curvature in order to enable the trains to maintain a high speed. Adequate support for the elevated along Lake street must also be provided.

Excavation has been proceeding on schedule and to date no serious accidents have occurred.

Annual F.P.E.S. Smoker Held in Student Union

Beginning with cigars and sound movies and ending with ice cream and sandwiches, the Fire Protection Engineering Society's annual smoker will go down in the annals of the society as one of the most successful ever held. Under a smoke screen laid by cigars in the hands of the 45 undergraduates, alumni, and professors present, the first reel of a two reel show was flashed on the south wall of the main lounge in the new student union.

The Educational Film Company, in conjunction with the Veneer Association, presented "Forest Treasure," a story of the veneer industry. It is one of the few modern industries which must depend upon primitive methods for its supply of rare woods, which come from the inlands of Africa, Australia, India, and the Americas. Like the arms of a huge devil fish, this United States industry reaches into all parts of the world, bringing back rare woods, such as mahogany, sycamore, zebra wood, lace wood, olive wood, satin wood, walnut, and American oak.

These "diamonds in the rough" are barked and treated in a 190° F. steam bath from one to four days. After this bath they are moist and pliable enough to be sliced into veneer 1/28 of an inch thick. After these slices have been dried, they are trimmed and squared. Skilled workmen then piece these slices together in the many beautiful and intricate

patterns found in furniture and homes today.

These veneers are also used as facing for plywood, giving the effect of solid pieces with the advantages of economy, equal strength in all directions, resistance to shock and splitting, counteraction to expansion, and the possibility of manufacturing any size sheet demanded.

The art of veneer is by no means a new one. The only existing pieces of woodwork done by the ancient Egyptians, 3500 years ago, are veneered. Hundreds of years later, Chippendale, Heppelwhite, and Sheraton, of England; and Duncan-Phyfe of America, took advantage of this practice when they made the beautiful antique furniture so highly valued today. At present, 90 percent of our furniture is veneered and precious woods are within the budgets of everyone.

The second reel was on the comedy side, showing three shorts of Popeye. Popeye, with the aid of his faithful can of spinach, fought his way out of three extremely precarious predicaments in as many minutes.

Following this, Professor Finnegan presented the Crosby-Fiske-Forster Handbook of Fire Protection to Robert H. Harmon. This "bible" of the fire protection engineer is presented each year by Salamander, honorary fire protection fraternity, to the present sophomore who made the best scholastic record as a freshman. Its purpose is to promote good study habits among students entering the department, and results proved that it accomplishes its purpose.

The work and pleasure of the evening then being finished, the smoker was adjourned at 10 o'clock.

ARX NEWS

Here we are upon the eve of a very important Armour Arx function, first of its kind, the All-Architectural Banquet . . . Truly a grandiose idea (boy, do we hate ourselves).

Just remember—Occasion: All-Arx Banquet. Date: Friday, Feb. 24, 1939. Time: Six. Guest of Honor: Professor Van der Rohe. Resultant: One—of a good time.

The seniors are still pounding small houses into miniature . . . Things are quiet and slow, maybe because we all miss Johanson's subtle and clean wit (sounds like a post-mortem). Poor Lorry . . . working. Famous last words: "well, I say . . ."

(Note: Johanson's gonna be at the banquet, if he can scrape up a buck, certainly you can!)

Cunningham has opened the Cunningham Beaux Arts Air Brush School. All Arx are invited to attend (upon remuneration of the necessary remuneration).

Skubic was around last week looking for a job, Baker had an idea, they both left the room, 10 minutes later the job-hunter came back alone with a look on his face which meant he'd just given up a ten spot.

There's a playboy in our midst; namely, Mr. E. M. Mandel . . . Life-class proved to be very interesting to all, especially the P. B. . . . She proved to be very friendly and was escorted throughout the nite by the P. B. . . . A most interesting evening.

Boz-Arts.

Show General Motors Movies At Assembly

"Color Harmony", a sound motion picture in full color, was one of the films presented at the first general assembly of the semester, in the school auditorium, last Friday afternoon at 10:30. The pictures, which were shown by Mr. Randegger of the General Motors Corporation, demonstrated the mechanism of an eye and explained the functions of the cones and rods of the retina, the sensitive portion of the eye. These cones contain chemicals which are sensitive to one of the primary colors.

When a beam of colored light strikes the cones, an electric current is set up which flashes a signal to the brain causing the sensation of color. The eye is capable of blending these impulses and registering the different color combinations and shades. The application of a pleasing combination of color shades to the modern motor car was then demonstrated.

Another picture entitled "Vacuum Control" explained the operation of various devices actuated by differences in air pressures. Soda straws, airplane wings and rubber suction cups were shown as examples of this phenomenon. The development of a new development in gear shifting was then shown. With no radical changes in the transmission, a system of levers operated by a lever on the steering wheel post replaces the conventional controls. However, 80 per cent of the shifting effort is furnished by a vacuum plunger operating from the intake manifold.



You'll enjoy these three stars in "WINGS OF THE NAVY" A Cosmopolitan production released by Warner Bros. coming soon to your local theatre.

★ GEORGE BRENT ★ OLIVIA de HAVILLAND ★ JOHN PAYNE

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