ATOMIC AGE SAFETY — A mechanic at the maintenance base of United Air Lines in San Francisco operates a punch press, wearing radioactive wristbands to protect his hands from possible injury. Should his hands enter the danger zone, Geiger tubes (circled) pick up radiation from wristband and stop the machine.

GENERAL SCIENCE

Bureau of Reclamation Cuts Research Programs

➤ RESEARCH PROGRAMS relating to materials or products that can be bought from private manufacturers will be dropped by the U. S. Bureau of Reclamation.

Commissioner of Reclamation W. A. Dexheimer has announced that the bureau will follow the recommendation of a survey team that "it does not seem wise for the bureau to attempt to compete" with private manufacturers.

The reorganization was ordered by Secretary of the Interior Douglas McKay, following the report of the survey group which has spent two months studying the reclamation work.

The survey report hit hard at research involving paints and herbicides where the Bureau of Reclamation laboratory has developed composition specifications for manufacturers. In the future, performance specifications will be used and standard products will be included.

Most of the bureau's activities are in the West, where it builds dams, plans for the management of river basins, and attempts to control and manage the water supply.

Research concerning hydraulics and the physical and chemical characteristics of earth and rocks under varying conditions of load, hydraulic flow and exposure will be continued.

Science News Letter, November 7, 1953

ASTRONOMY

Astronomical Highlights

Top astronomical events of 1953 included discussions concerning a possible national observatory, and three developments each in radio and photoelectric astronomy.

➤ ELEVEN TOP astronomical highlights of the past year, picked by Dr. Harlow Shapley of Harvard College Observatory, are:

1. A conference this past summer of photoelectric astronomers at the Lowell Observatory, meeting under the auspices of the National Science Foundation, during which definite progress was made in discussions of the advisability of establishing, in the near future, a cooperatively-operated research observatory at the best possible site, probably in the Southwest. It would give special reference to the immediate requirements of photoelectric programs and be available also for possible expansion for general astronomical research.

2. Starting construction of the world's greatest "inch" for telescopic observation—the 3,000-inch steerable radio telescope at Jodrell Bank near Manchester, England, where epochal work will be continued on nearby meteors and remote radio stars. Dr. A. C. B. Lovell of the University of Manchester reports that the giant instrument will seek to penetrate the dust clouds, found in the Milky Way's rift, in order to reveal what stellar wonders lie beyond it.

3. The design and preliminary testing by Dr. Andre Lallemand and his associates of the Observatory of Paris, France, of a device for "electric photography," which holds promise of speeding up greatly the recording of faint stellar objects.

4. Attainment for the first time of stars of magnitude 23 on the photographic scale with the 200-inch giant Hale reflecting telescope on Mt. Palomar. Dr. W. A. Baum of Mount Wilson and Palomar Observatories achieved this by making use of new, photon-counting devices in photoelectric photometers.

5. As an important step in the analysis of the structure of galaxies, the exploration by radio of the Magellanic Clouds by Drs. Frank Kerr and J. V. Hindman of the Radiophysics Laboratory, Sydney, Australia, using for the first time the rapidly developing tool of the 21-centimeter radiation emitted by neutral hydrogen atoms in interstellar clouds. They found the volumes of the Clouds are larger and their motions more turbulent than those recorded on photographic plates.

6. Further developments in the revision of the extra-galactic distance scale, first reported as a highlight last year. The new work includes contributions by Dr. Walter Baade and associates at Mt. Wilson and Palomar Observatories; Dr. Gerald E. Kron of Lick Observatory and Dr. S. C. B. Gascoigne of Australia's Commonwealth Observatory, while working in Australia; Dr. A. D. Thackeray of Radcliffe Observatory, Pretoria, South Africa; Dr. Harold Weaver of the University of California; and Mrs. Virginia McK. Nail and Dr. Harlow Shapley of Harvard College Observatory, who find, from a study of the brightest stars in the Magellanic globular clusters, that the previous distances to galaxies beyond our own should be multiplied by 2.2.

7. The measurement photoelectrically and the analysis at the McDonald Observatory, Tex., by Drs. Gerard P. Kuiper, Daniel L. Harris III and I. I. Ahmad of Yerkes Observatory of the light variations of ten asteroids. Their studies confirm the belief that most asteroids are irregular rotating fragments, with the reflected light of the sun varying with the asteroid's rotation, but without changing in color.

8. Studies of the night sky by Dr. Franklin E. Roach of the Naval Ordnance Test Station, Inyokern, Calif., in which he demonstrates the connection of the corona and the zodiacal light.

9. Pioneer theoretical work by Dr. G. C. McVittie of the University of Illinois on the application of certain Einstein relativity equations to gas dynamics, with potential usefulness in the study of interstellar material and phenomena associated with novae.

10. The detection by a research group from the Naval Research Laboratory, working at White Sands, N. Mex., of the ultraviolet Lyman alpha line of hydrogen, with a wavelength of 1216 Angstrom units, in the solar spectrum. Their observation, made by using rocket-borne photon counters shot above the ozone blanket to a height of some 50 miles, has been confirmed by Dr. William A. Rense and associates at the University of Colorado, also through the use of high-altitude rocketry.

11. The observaion by Drs. K. E. Machin and F. G. Smith of the Cavendish Laboratory, Cambridge, England, of the occultation of the strong radio source in the Crab Nebula by the outlying parts of the solar corona when the nebula is still at a distance from the sun of as much as ten times the sun's apparent radius. This is far beyond the coronal streamers that can be recorded photographically.

Science News Letter, November 7, 1953

A British experimental plane with a flexible wing structure, called an isoclinic wing, is expected to have a "tremendous impact" upon the *wing shapes* of future high-flying airplanes.