Dr. Compton's $500,000,000 pays . . .

Bedlam Subdued

When the vast Research and Development Board got under way in July 1947, many a scientist shook his head dubiously. As the government's top scientific group* it was charged with the thorny task of researching for the three armed services. One exasperated scientist explained: "It works like this—the service that screams the loudest gets the most-est." Board members themselves dubbed the RDB "The Little Town of Bedlam."

This week, exactly two years and 23 board meetings later, the RDB took stock. Settling into new, freshly painted offices in a restricted part of the Pentagon Building, it was vaster and busier than ever. Its silver-haired 61-year-old chairman, Dr. Karl T. Compton, topped a sprawling complex which included a six-man board, a 250-man secretariat, fifteen committees with specialties ranging from guided missiles, atomic energy, electronics, and aeronautics to navigation, ordnance, and human resources, and about 2,000 part-time military and civilian scientists. Compton's king-sized mission: to allocate half a billion dollars a year for military research, fill gaps in military research, and reduce duplication.

Despite what one scientist called "two terrible years," the board this week could point proudly to a number of major scientific accomplishments:

▶ Some startling but as yet secret advances in guided missiles (presumably in guiding techniques). One board member said: "We feel we may be over the hump in the basic problems of guided missiles."

▶ A "very promising" new anti-aircraft guided missile. It will be fully tested in about a year.

▶ Newly designed lightweight tanks for airborne troops and a new tank gun.

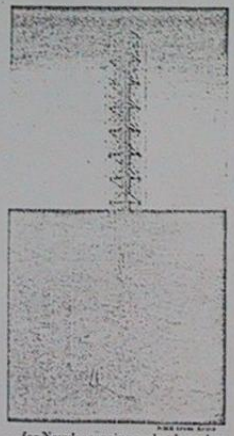
▶ A whole series of new bombsights (combining both radar and visual techniques) for use in jet bombers.

▶ A new long-range jet bomber to replace the B-36 and similar planes in about five years.

▶ The development of a revolutionary experimental submarine which, Compton explains, is a model "where no consideration is given to armament. The one objective is to produce the most effective fast submarine to see how far you can go if you forget the torpedo tubes and other armament."

As for the workings of the board itself, "Dr. C." (as the board members call him) could boast of two important advances. (1) Certain fields of research have been assigned exclusively to one of the three services. For example, despite vehement protests by the Navy and the Air Force, the board recently gave the Army the job of handling all biological warfare. (2) For the first time in the nation's history the board this month completed a single research budget for all three services.

The budget, now on Secretary of Defense Louis A. Johnson's desk, was designed, according to Compton, "without regard for a special service slant. We let the chips fall where they may." It apportions some half a billion dollars for 1951 to the Air Force, Navy, and Army on about a 40-40-20 per cent basis. This follows the general pattern of the current budget, with some shifts in emphasis. The biggest single slice, a total of about 20 per cent, will go for guided missiles. Aside from missiles, the Air Force will concentrate its research on jet bombers, the Navy on naval air power, and the Army on anti-aircraft and tanks.



. . . for Navy's seagoing rocket launcher

Unification Agonies: Despite these decisions, RDB men knew that the board suffered all too often from unification wrangles that still harassed the whole National Military Establishment.

The six-man board consists of two representatives of each service: Gen. Joseph T. McNarney and Brig. Gen. D. L. Putt for the Air Force; Vice Admiral John Dale Price and Rear Admiral Albert Gallatin Noble for the Navy; and Gen. J. L. Devers and Maj. Gen. Charles Gardiner Helmick for the Army. Meeting monthly, these men could hardly avoid some bitter interservice wars. The Air Force and Army, for instance, have pressed the Navy to ditch part of its aviation research and go all out for undersea warfare, but the Navy still remarks nearly half its research funds for air projects. (This week the Navy told how ship-launched rockets were "sounding" the upper atmosphere.) The Army is disgruntled over getting the smallest slice of the budgetary pie and is also wrestling with the Air Force for more development of tactical planes.

Dr. Compton can do little about this kind of controversy, since the board takes its orders from the Joint Chiefs of Staff on what strategic goals to pursue. But in spite of the handicaps, top board members feel that Compton has performed miracles since he took over from Dr. Vannevar Bush nine months ago. (He gave up the presidency of the Massachusetts Institute of Technology to take the board job.)

Where Bush, bristling with salty impatience, would often rile the military members without obtaining a compromise, Compton with his soft, pleasant voice and persuasive personality applies the soothing technique wherever possible. Illustration: When the board met to vote on the new research budget July 12, one secretariat member said: "We expected there would be a tremendous carrying-on." Yet after a short, soft-spoken introduction by Compton, the six board members passed the budget unanimously by voice vote.

The Hurdle: The next big job for Compton is to make the budget stick. Secretary Johnson is expected to approve it, but there is some doubt as to whether, within his present powers, he can force the services to follow it.

Meanwhile Compton goes quietly about his job. Arriving about 8:30 each morning in his red-draped Pentagon office, he confers informally with a stream of scientists and military men or pores into other RDB offices to check on lagging projects. He works until 5 or later, then drives his gray Lincoln home to his apartment in the Wardman Park Hotel, where he often types out notes on future projects on one of his three portables.

He takes a philosophical view of his tough job, saying: "A very substantial amount of coordination of the departments and the improvement of the programs is accomplished not at top levels but by the getting together of the working technicians."

Magnets With Memories

An electromagnet is simply a hunk of iron with wire coiled around it. When an electric current passes through the wire, the iron acts as a magnet; when the current is turned off, the magnetic force fades to a shadow. This shadow, known as residual magnetism, is generally a nuisance; for when an electrical engineer turns a magnet off, he usually wants it all the way off.

But to Prof. Way Dong Woo and Dr. An Wang of Harvard University, residual magnetism is the key to an ingenious new device—a rapid-fire "memory organ" for temporarily storing numbers and instructions in super-speed mathematical computing machines. Woo and Wang, who are both graduates of Chiaotung University in Shanghai, are physicists in Harvard's Computation Laboratory, which has been the birthplace of several famous automatic computers.

Last week Professor Woo explained how the new magnetic memory system works. (Dr. Wang was honeymooning and could not be reached.) Doughnut-shaped slugs of a special iron alloy are positively or negatively electromagnetized, leaving them with positive or negative residual magnetism. All numbers and letters of the alphabet can be represented with a two-symbol code (for example, the Morse code with its dots and dashes), and so any sort of information can be stored in a series of iron doughnuts by magnetizing some positively, the rest negatively.

Woo and Wang wired their magnets together in strings and worked out a way to make electrical pulses push the magnetism from one iron slug to the next and so on down the line. Thus their gadget can rattle off numbers or commands to an obedient computer at a top speed of 35,000 dots or dashes per second. It also can hide its time indefinitely, holding numbers in storage until they are needed.

The scientists who build and play nursemaid to computers are interested in memory organs, for they agree that one of the weakest links in the modern mechanical brain is its memory. Connected mathematician Edmund C. Berkeley, secretary of the Association for Computing Machinery: "This new device for the rapid memory of automatic computers is wonderfully fast and permanent. Up to now we have had fast devices for memory; but whenever the current was interrupted, the information vanished. We also have had permanent devices for memory; but reading information out of them has been discouragingly slow."

Drs. Woo and Wang: Their device recalls 35,000 numbers a second

*Congress set up the RDB under the National Security Act to succeed the Joint Research and Development Board, which combined Army and Navy research.

Engaged: In London July 20, the Earl of Harewood, 28, son of the princess royal, and Vienna-born concert pianist Marion Stein, 22. The earl, opera critic

The earl and his girl: A royal nod

of the left-wing New Statesman and Nation, had to obtain the official consent of his uncle, King George VI, before his engagement could be announced.

Remarried: Barney Ross, former holder of two world's boxing titles, and dancer Gaiety Howlett, divorced in July 1946, were remarried in Del Mar, Calif., July 24.

Divorced: Academy Award winner Jane Wyman, 33, ("Johnny Belinda") and actor Ronald Reagan, 37, president of the Screen Actors Guild, whose marriage was once lauded as one of Hollywood's happiest; in Los Angeles, July 19.

Suing: Onetime child star Anne Shirley, 31, is seeking a divorce in Los Angeles from director Adrian Scott, 37, one of the ten "unfriendly witnesses" cited for contempt by the House of Representatives in 1947.

Americanized: On July 19, in Washington, President Truman signed a bill permitting Leon Nikolaievich Volkoff, 35, former Soviet bomber pilot and hero of W. L. White's book "Land of Milk and Honey," to remain in the United States and take out citizenship papers.

Died: Van A. Bittner, 64, veteran labor leader and vice president of the CIO; in Pittsburgh, July 19. He was taken ill some months ago in Atlanta.

▶ Rear Admiral Frederic R. Harris, 74, who designed the world's largest floating drydocks, capable of lifting 100,000 tons; in New York, July 20.

Reinterred: The body of Bodger Young, infantryman who died gallantly on New Georgia in 1943 and was immortalized in the Army song "Bodger Young," was buried near his home in Green Springs, Ohio, July 22.