Dirigibles in Collision.

ACCORDING to a correspondent of the *Daily Express* at Vienna, an extraordinary accident occurred on Monday over the aviation ground at Linz. The Archduke Joseph Ferdinand was testing a new dirigible balloon, and in order to compare its performance with other airships, arranged with Count A. von Sternberg to make a simultaneous ascent with his dirigible. The two airships rose to a height of about 200 ft., when they were seen to rush towards one another and come into collision with a violent shock. Neither vessel sustained any serious injury, but they were locked together and it was impossible to separate them until they descended at Tulla five hours later.

Movable Aerodock.

EXPERIMENTS have been successfully carried out near Berlin with a new form of movable aerodock for airships, upon a principle devised by the Minister of War. It is in the form of a huge tent, and is said to be quite easily erected and struck in a very short time for transporting to the required scene of action.

Gordon-Bennett Balloon Cup.

THE date for the start of this event has been brought forward a week, and October 3rd is now officially announced as the date decided upon. Among the events to be organised by the Swiss Aero Club in connection with this race, will be a landing competition, to take place probably on October 1st.

Magnetos for Flyers.

As showing that the aeroplane business is becoming tangible already, we hear from United Motor Industries that Messrs. Eisemann have recently received one order for twenty-seven of their tension magnetos for aeroplane work. One of these aeroplane Eisemann magnetos, similar to that used on the Wright machine, was exhibited by them at the Aeronautical Show at Olympia.

Clerk of the Weather A.D. 2,000.

AMONG the novelists who have recognised in matters aerial an opportunity to thicken their plots, must be numbered Mr. Rudyard Kipling. In the American edition of his work, "With the Night Mail," he has added a chapter in which he pictures some of the conditions which may obtain in 2,000 A.D. in view of the present rate of progress in flight. Among the most interesting items are some sample weather bulletins which may be issued some 90 years hence, and we reproduce one herewith :—

"The northern weather so far shows no sign of improvement. From all quarters come complaints of the unusual prevalence of sleet at the higher levels. Racing planes and digs alike have suffered severely—the former from unequal deposits of half-frozen slush on their vans, and the latter from loaded bows and snow-cased bodies.

"As a consequence, the northern and north-western upper levels have been practically abandoned, and the high flyers have returned to the ignoble security of the 300, 500, and 600 ft. levels. But there remains a few undaunted sun-hunters who, in spite of frozen stays and ice-jammed connecting-rods, still haunt the blue empyrean."

Military Status of Aeronautics.

OWING to the great pressure upon our space this week occasioned by the description of the aero engines exhibited at the Olympia Aero Show and other matter, we have been compelled to hold over from this week's issue the instalment of Major Squier's article on the "Military Status of Aeronautics."

Back Numbers of "Flight."

As a corollary to the enormous demand for the souvenir and Show numbers of FLIGHT, a very large number of inquiries continue to be received for back numbers. The publishers have pleasure in announcing that they have secured a few of the early issues, and any of our new readers who may wish to complete their sets may still obtain the first thirteen numbers for 1*s.* 9*d.*, post free, from the publishers, 44, St. Martin's Lane, W.C.

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LOW *v.* HIGH-POWERED FLYERS.*

By JOSÉ WEISS.

WE know that the work required to impart to a body any given speed amounts to a number of foot-pounds equal to one-half the produce of the mass of the body by the square of that speed.

I am quoting this elementary principle because it brings home to us very clearly that the very first condition required for raising an aeroplane, viz., its passage from standstill to flight speed, is purely a question of foot-pounds. No aeroplane can ever be raised (that is, in calm air) until the full number of foot-pounds enacted by the principle just quoted have been expended ; and it matters little how this is brought about, either by a falling weight or by running the machine down an inclined plane, or simply by the mere power of the engine.

But what I want to emphasise is that the above principle is only theoretical, and that it does not include the very important additional number of foot-pounds required to overcome the friction on the ground, and which depends entirely on the nature of that ground. So that a well-made machine, having ample power to fly, but depending only on its engine for raising itself, although quite capable of doing so on a good surface, might be utterly helpless on a bad one, in exactly the same manner as a cyclist, who could get up a pace of 25 miles on an asphalte track in a few seconds, could not reach a speed of ten on a ploughed field if he were to try the whole day. If, for instance, the Wright machine was placed on a light trolley fitted with good bicycle wheels, and if that trolley was running on asphalte, the falling weight and the rail could quite well be dispensed with, and the machine, in calm air, would leave the ground after a run of about 70 yds. Let us say the machine weighs, roughly, 1,000 lbs., and the speed, as taken from the published records, is 60 ft. per sec., and we have for $\frac{Wv^2}{2g}$ $\frac{1{,}000 \times 60^2}{64} = 56{,}250$ ft.-lbs. Taking, then, the 24-h.p. motor to yield an actual efficiency of no more than two-thirds, or 16-h.p., the time required for developing the above 56,250 ft.-lbs. is $\frac{56{,}250}{16 \times 550} = 6{\cdot}4$ secs., and the space covered $6{\cdot}4 \times 30 = 192$ ft. By using the falling weight, viz., 1,500 lbs. falling 20 ft., and supplying 30,000 ft.-lbs. — the work left for the engine is reduced to 26,250 ft.-lbs., which gives for time $\frac{26{,}250}{16 \times 550} = 3$ secs., and for space $3 \times 30 = 90$ ft.

This allows nothing for frictional loss or air resistance ; and still Wilbur Wright manages all right with his 70-ft. rail, showing that my figures for a start without the weights are well on the right side. In the total absence of wind, however, the shortness of the rail must cause, and does cause, an occasional mis-start.

It is very clear that there would be no need for launching appliances of any sort if we had for the start a perfectly smooth and hard surface on which the necessary speed could be reached with a minimum of frictional loss.

Now the question which presents itself is this : Do we want a machine capable of rising unassisted from any rough surface? The Voisin type is of this class, which I will call the high-power type. Or do we want a lighter machine requiring a minimum of power, but capable of rising from a perfect surface only? The Brothers Wright flyer belongs to this second class, which I will call the

* Paper read before the Royal Aeronautical Society of Great Britain, on Friday, March 26th, 1909.