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MR Wyneler.

COPY.

GENERAL OFFICE OF INFORMATION  
MORSEBY HOUSE, 83 BAKER STREET, LONDON, W.1.

Tel: Welbeck 4420.

Ext. 746.

14th December, 1953.

Dear Tom,

The Ministry of Supply material just screened to all Newareel and E.B.C. T.V. representatives of the WOOMERA ATOMIC EXPLOSION is agreed to be released on the 21st January, 1954, by the interested parties, and thus enable convenient and definite releases simultaneously in Australia and elsewhere.

The utmost importance is especially attached to this simultaneous Australian release.

The film is supplied to your Company for newareel use only and is not available for Television use, but a copy will be despatched to the Foreign Office British Information Services, New York, and also to Information Services, Germany, and they will handle the Television distribution side for U. S. A. and Germany - releases same date as above.

On the other hand, you may send copies of the item for newareel use anywhere, provided the agreed date of release is strictly observed.

Would you kindly let me have your acknowledgment of the above conditions, and oblige.

Yours sincerely,  
(signed) Fred Watts.

NO STILLS

ref to C.O.I.



F. Watts,  
Film Division.

G. T. CURMINS ESQ.  
ASSOCIATED BRITISH PATHE LTD.  
PATHE HOUSE, W.1.

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WOOMERA NEWSREEL.

1. Desert scenes showing mulga trees. The base was far beyond the Woomera settlement, more than 400 miles beyond the nearest towns of Port Augusta and Adelaide, in the heart of trackless semi-desert. The terrain varied from such scenery as shown here to rolling sand dunes and drifts. Every vehicle or convoy setting out from Woomera had to be equipped like an expedition, with water, stores, petrol and camping facilities to cover twice the time expected to take on the trip - to cover mishaps. Reconnaissance aircraft were kept in readiness to search for vehicles that might fail to report at radio-controlled check points.
  2. Bristol freighter arriving. A large proportion of supplies and equipment had to be taken in by air, and a six-day-a-week airlift was operated by the Royal Australian Air Force and the Royal Air Force flying York and Bristol aircraft. An airstrip was improvised at the site and an average of six heavy aircraft a day landed there. The Bristol freighter seen landing here is carrying Mr. C.A. Adams, Sir William Penney's deputy for the operation, and other members of the scientific staff.
  3. Shadowgraph being erected. In preparation for the explosion, much scientific equipment had to be placed in position ready to take instantaneous measurements. This shadowgraph will give information of the spread of heat and radiation.
  4. Mr. Duncan Sandys, Minister of Supply, visits the site. When Mr. Duncan Sandys visited Australia early in September, he paid a special visit to the base, known as Emu Field, to see the progress of work and the conditions under which the people there had to live. He is shown meeting members of the film and photo section.
  5. Tower under construction. The weapon was exploded on a low tower which vanished immediately. The actual height was not revealed.
  6. Cameras being prepared. All phases of the explosion were recorded on film, some of the cameras being specially built to take exposures at the rate of 100,000 a second. Here are some of the cameras being placed in position. The main body of observers were fifteen miles from the explosion and most of the shots seen later were taken from the same distance.
  7. York aircraft of the R.A.F. arrives carrying Sir William Penney.
- All the arduous preliminary construction work was carried out by members

of the Australian Forces under the control of the Australian Government. Scientific preparations were directed by Sir William Penney, recognised as one of the world's outstanding authorities on atomic weapons. He left England by air on 19th September and, a few days later, arrived at Emu Field. He can be seen taking his first look as the York aircraft lands. As he alights, he is shown a tin of opals found on the site, and is greeted by members of his staff and by Australians. In the intense day-time heat - temperatures varied from 112 degrees in daytime to freezing point at night - it is advisable to wear suitable headgear and he is seen putting on his bushranger hat for the benefit of photographers.

8. The Australian flag flies over the field. This was another outstanding example of a combined operation, in which the Australian Government played a vital part by supplying men and materials for the construction of the site and by allowing the tests to take place in their territory. Some of their scientists also took part on the technical side. Their construction forces worked for nine months under the most difficult conditions and achieved results comparable to some of the greatest war-time feats.

9. Mr. Adams confers with some of the experts to assess progress. In the shots are Messrs Marshall, McKenhill and Tomlin.

10. The weather, and particularly wind conditions, govern the exact date and time of the test. All preparations are complete, but now the right moment has to be awaited to make sure that no radio-active clouds are carried over inhabited areas. On this occasion there was a wait of about ten days. Here is a York aircraft in the midst of a dust storm.

11. Met. men in conference. These men have to make the decision on the weather conditions. They are Cdr. F.L. Westwater, Mr. M.H. Freeman (Air Ministry), Mr. H. Phillpot (Weather Service) and Mr. H. Ashton (an Australian expert).

12. A balloon carrying special equipment is released to help in deciding conditions.

13. The last few minutes shown on the control room clock. Watchers hear a voice recording the time and finally the last 5 - 4 - 3 - 2 - 1 NOW in the last five seconds. Flashing lights on an indicator board show that every piece of apparatus is ready to carry out tasks which, in some cases, may be over in a millionth of a second.

14. More apparatus being prepared to register effects of the explosion.
  15. As the mushroom forms, rockets are fired through the radio-active centre with apparatus designed to record valuable information, and to bring back samples.
  16. Distant shots of the explosion showing formation of the smoke column. This is just as the watchers saw it.
  17. Closer shots, showing the Wilson Cloud (named after an early scientist). The first pressure wave is followed by a suction wave. While the suction lasts, the temperature is many degrees colder and, if the air contains enough water, vapour fog forms. This condensation fog is illuminated by the light from the fireball at the centre of the explosion and shows up here as a large rectangular bright patch. As the suction passes outwards, the fog evaporates and the cloud disappears.
  18. Sir William Penney stands with his back to the tower waiting for the explosion. As soon as the first dazzling light is gone, he turns round, looks carefully, turns back and waves a signal that the news can be flashed to England.
  19. Shots of groups of observers, some examining apparatus.
  20. Later stages of the explosion, with the cloud gradually being caught by winds at higher altitudes.
  21. More shots of watchers.
  22. Later stages of the cloud.
  23. Canberra flies towards the cloud. An R.A.F. Canberra with a crew of three flew from Woomera and soon after the explosion flew through the radio-active cloud. This flight into the unknown was made to find out exactly what conditions could be expected and to obtain further scientific and medical information. Tests made afterwards revealed no harmful effects to the crew or aircraft.
  24. Excellent shots of the explosion and cloud effect, including slow motion shots of the cloud billowing up.
  25. The initial fireball of the explosion is gradually obscured by rising clouds of sand and nitrogen oxides caused by chemical reactions in the air.
  26. Another view of the explosion.
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WOOMERA ATOM BOMB.

Britain's second atomic weapons test was held in October this year at Emu Field, a site on the Woomera Rocket Range in Australia. It consisted of two major explosions, and the present film deals with the first of these, which took place on 15th October.

In this test the weapon was exploded on a steel tower which vanished instantaneously. The film shots of the actual explosion give an interesting impression of what is known as the Wilson Cloud. They show the white hot fireball in the centre and the passage on the ground of the rapidly expanding pressure wave. The pressure wave is followed by a suction wave (in the recent war many windows and doors were pulled outwards by the suction wave from high explosive bombs). While the suction lasts, the temperature is many degrees colder and if the air contains enough water vapour, fog forms. This condensation fog is illuminated by the light from the fireball and shows up in the film as a large rectangular bright patch. As the suction passes outwards, the fog evaporates.

As at Montebello, the Woomera trials were conducted by Sir William Penney and a team of scientists from the Ministry of Supply. They were assisted by Australian scientists who undertook certain important tasks in connection with the observation and measurement of the results. The Australian Government again gave their full co-operation and the preparation of the site hundreds of miles from the nearest town in the midst of trackless semi-desert was almost entirely an Australian effort. It meant nearly 9 months of unremitting toil in most arduous conditions. Temperatures here sometimes varied from as much as 112° in daytime to freezing point at night. One of the great problems was transporting equipment and although the greater part went in by air, there was still a very large quantity which had to be moved by vehicles from the staging base at Woomera.

Every vehicle or convoy had to be equipped like an expedition with water, stores, petrol and camping facilities to cover twice the time expected to be taken on the trip, the reconnaissance aircraft had to be kept in readiness for vehicles which might fail to arrive at the radio-equipped check points.

A 6-day a week airlift was operated by the R.A.A.F. and the R.A.F., flying York and Bristol transport aircraft, and up to 6 heavily-laden planes a day landed on the improvised air strip. Construction of the site was carried out by the Australian Army and the R.A.A.F. who worked up to 70 hours a week on the task.

December, 1953.

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CENTRAL OFFICE OF INFORMATION  
NORGEBY HOUSE, 83<sup>b</sup>BAKER STREET, LONDON, W.1.

Tel: Welbeck 4420.

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Films Division.

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LPF201

ATOM WEAPON TEST AT WOOMERA

Can No.1 - Preparations

1. & 2. Desert scenes, showing Malga Wood.
3. & 4. In the Desert. A fuel convoy passes through.
5. A Bristol Freighter carrying supplies from Woomera to Ben Field coming in to land.
6. Close up of Bristol Freighter.
7. Mr. G. A. Adams, Scientific Superintendent, arrives from U.K.
8. Close up of Mr. Adams after arrival.
9. Panorama of group after Mr. Adams' arrival.
10. Laying cables for the operation.
11. Maintenance of vehicles.
12. & 13. A shadowgraph is set up ready for the test.
- 14, 15 & 16. Mr. Duncan Sandys, Minister of Supply, paid a visit to the site during his visit to Australia.
17. Mr. Sandys at the main photographic site.
18. Mr. Sandys meets the members of the Photo Section.
19. & 20. Long shot of the Weapon Tower.
21. The Weapon Tower under construction.
22. - 26. Preparing cameras.

Can No.2 - Zero Hour Approaches

1. The York carrying Sir William Penney lands.
2. & 3. York aircraft taxis in.
4. & 7. Sir William Penney alighting from York aircraft.
8. Mr. Adams in conference with Messrs. Marshall McKenhill and Tonlin.
- 9, 10, 11, 12 & 13. Medium, long and mid-shots and panorama of conference.
14. Waiting for the right conditions. Newspaper in sand with appropriate headlines.
- 15, 16, 17. York aircraft in heavy sandstorm.
18. & 19. Long shot and panorama of met. conference. Cdr. F. L. Westwater and Messrs. M. H. Freeman (Air Ministry) H. Phillipot (Weather Service) and H. Ashton (Australian).
20. Long shot of met. balloon.
21. At the control desk.

22. Close-up of timing dial.
23. Close-up of oscilloscope operating.
24. Dawn shot of camera.
25. Check lights go up on instrument panel.
26. Rockets being fired to collect samples from radioactive cloud.

Can No. 3 - Living Conditions, Protection and Blast Area.

1. Moonlight shots of scientists' tents.
2. & 3. A scientist writing home.
4. & 5. In the Mess Hall.
- 6, 7 & 8. In the "Bear Garden".
9. Health tests.
10. & 11. Jeep taking men in protective clothing to examine contaminated area.
12. - 20. Men in protective clothing making tests with geiger counter.
21. Protective boots - shot of feet.
22. & 23. Making and coiling a beamerung.
24. etc. Shots taken in the active area after the explosion.

Can No. 4 - Miscellaneous.

1. Long shot of Wespun Tower.
2. The Australian flag.
3. Panorama of camp accommodation.
4. Wing for communications.
5. Close-up of lines'men on telegraph pole.
6. & 7. Tents at Bus Field.

Can No. 5 - The Explosion

Shots taken with normal speed cameras. On the first frames are shots of the fire ball (badly over-exposed) followed by the Wilson cloud. As the Wilson cloud effect clears the later stages of the fire ball are seen. This fades and merges into the ascending dust column. Temperature inversions impede the rise of the column.

There are also shots showing very late stages of the cloud, and Sir William Penney and other members of the scientific staff watching the explosion.

Can No. 6 - The Fire Ball

These are mainly high speed shots of the fire ball and the early stages of the dust column. The last shot was taken with a normal speed camera.