the cycle of SAR operations on land and sea

THESE CHARTS, which portray the cycle of search and rescue operations on land and sea, were produced—as a public service—for the Air Sea Rescue Bulletin by Aerial Products, Inc., Merrick, New York, manufacturers of approved pyrotechnic signalling equipment. They were designed by the Air Sea Rescue Agency, Washington, D. C., and executed by the Design and Standards Section, EXOS, U. S. Navy Department.

Obviously, it would be impractical to illustrate on any one chart, all of the variable factors and situations which might enter into a given land—or sea—search and rescue operation. Thus, what these charts are intended to do is to portray the basic procedures of communications which set the search and rescue forces in motion, and the primary movements involved in an efficient search and rescue operation.

The term *search and rescue* has been defined as *the act of finding and returning to safety the survivors from an emergency incident.* This definition is sufficiently broad to embrace the rendering of aid to survivors from civil and military aircraft and vessels . . . and where aircraft are involved, it will apply on land or at sea.

The mission of search and rescue is a joint responsibility of all nations and peoples. It is a *team* effort . . . an operation which, at one time or another, may require the participation of every type of aircraft or vessel, plus the ingenuity and initiative of many groups and individuals.

The secret of successful search and

rescue is *organization*,—organization in the sense that trained personnel know what to do, and how and when to do it. Also, that they are supplied with the proper tools and equipment and—not the least in importance—that crews and passengers of aircraft or vessels in distress possess the knowledge of methods and techniques, plus the equipment, that will enable them to alert the rescue team and to survive until aid arrives.

Since its inception against a background of war, search and rescue has experienced an evolution in methods, techniques and equipment. Its wartime conception was based upon the urgency of saving men and machines to carry on the fight . . . it operated in more or less concentrated areas, using all available military facilities such as short-range aircraft and boats, destroyers, submarines. Five short years have witnessed an amazing refinement. It has acquired a "know how," based on experience, which has provided the basic pattern for operation on an international plane in keeping with the world's new concept of aviation and maritime development. Today it is a vast, efficient network which includes the use of long-range air and surface craft; a well-organized communications system utilizing radio, radar, racon and loran; a comprehensive pattern of ocean station vessels performing an invaluable weather reporting and safety function; and an extensive system of rescue coordination centers which tie the whole together and direct the movement of the search and rescue team.

Practically all of the nations of the world are including the subject of search and rescue in their diplomatic and commercial discussions . . . not alone because it represents an invaluable contribution to the safety of world travel on land or sea, but because it makes available an important instrument with which to improve friendliness and good-will between the nations of the world.

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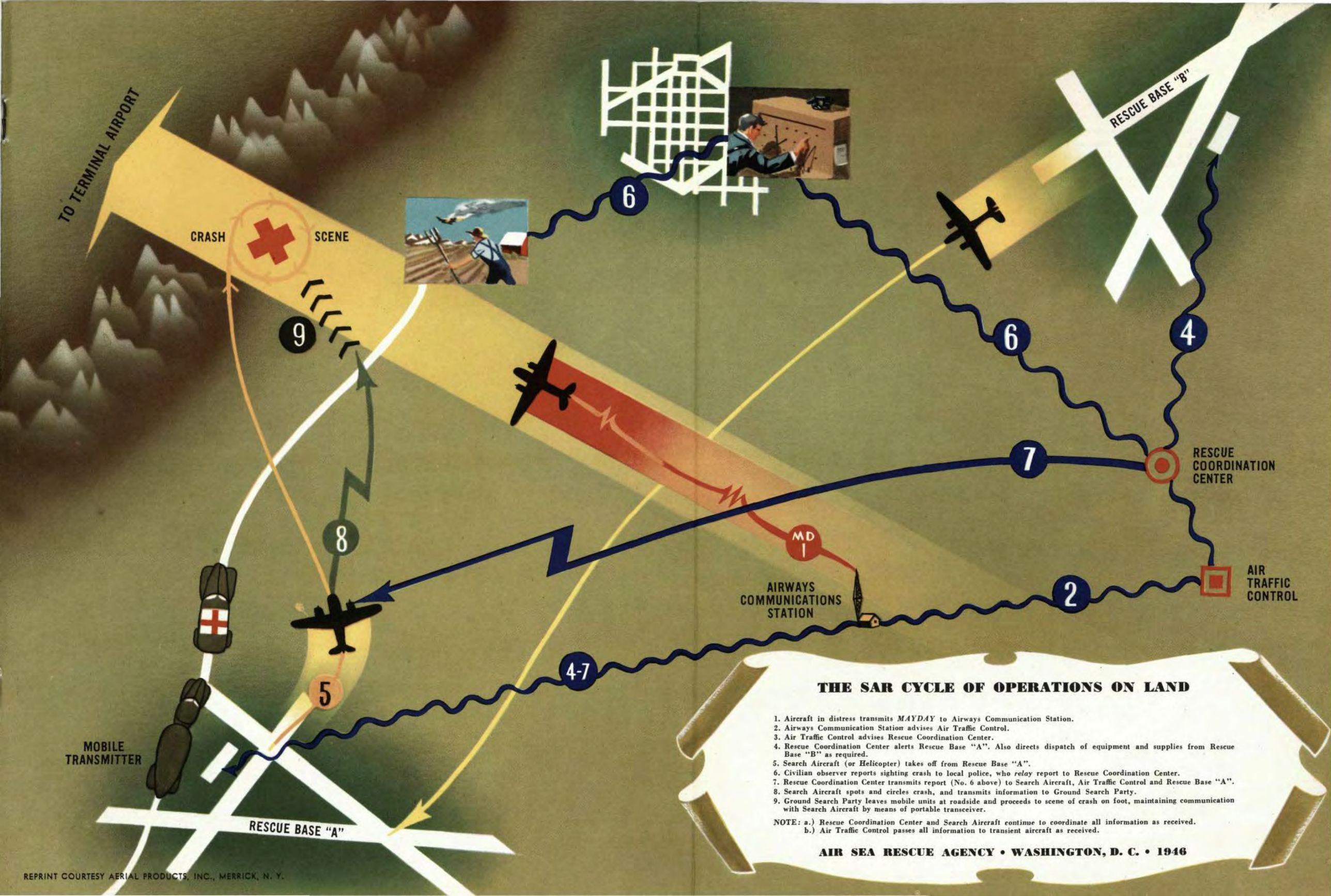

THE SAR CYCLE OF OPERATIONS ON LAND

1. Aircraft in distress transmits *MAYDAY* to Airways Communication Station.
2. Airways Communication Station advises Air Traffic Control.
3. Air Traffic Control advises Rescue Coordination Center.
4. Rescue Coordination Center alerts Rescue Base "A". Also directs dispatch of equipment and supplies from Rescue Base "B" as required.
5. Search Aircraft (or Helicopter) takes off from Rescue Base "A".
6. Civilian observer reports sighting crash to local police, who *relay* report to Rescue Coordination Center.
7. Rescue Coordination Center transmits report (No. 6 above) to Search Aircraft, Air Traffic Control and Rescue Base "A".
8. Search Aircraft spots and circles crash, and transmits information to Ground Search Party.
9. Ground Search Party leaves mobile units at roadside and proceeds to scene of crash on foot, maintaining communication with Search Aircraft by means of portable transceiver.

NOTE: a.) Rescue Coordination Center and Search Aircraft continue to coordinate all information as received.
b.) Air Traffic Control passes all information to transient aircraft as received.

AIR SEA RESCUE AGENCY • WASHINGTON, D. C. • 1946

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THE SAR CYCLE OF OPERATIONS AT SEA

1. SOS from aircraft in distress to Air Traffic Control (on Route Frequency).
2. Air Traffic Control alerts Rescue Coordination Center.
3. D/F Net Control alerts D/F Stations.
4. D/F Stations take bearings and transmit to D/F Net Control.
5. D/F Net Control evaluates bearings and reports estimated location to Rescue Coordination Centers.
6. Rescue Coordination Center alerts Rescue Bases which dispatch rescue craft (aircraft and boats).
7. Rescue Coordination Center alerts OSV and patrol vessel.
8. Rescue Coordination Center alerts transient Merchant vessels.
9. Air Traffic Control coordinates with Rescue Coordination Center and alerts transient aircraft.

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