

BIBLIOGRAPHY SECTION

Edited by ROBERT B. CASARI

CAMERA COPYING
by
Robert B. Casari

Nearly everyone has had, at one time or another, the opportunity to borrow material from local libraries, museums or private collectors to copy for his own use. This usually means laboriously writing or typing the printed material and having to forego duplicating photographs. However, anyone who has a nominal amount of cash (or good credit) can own his own copying equipment capable of duplicating on 35mm film almost any type of material very economically. In this form, it can be read by projecting with an enlarger, using a strip film projector or with any microfilm reader available at the public library. By using the correct film, it is possible to obtain excellent negatives of photographs from which prints can later be made.

The choice of 35mm size is purely one of economics; the film can be bought in 100 ft lengths at less than 1¢ per picture. Printed material can be copied two pages to a frame (picture) at a film cost less than most original books. For printed matter, Kodak High Contrast Copy Film (M417) is the only one required; for photographs, where tone reproduction is needed, this writer prefers the fine grain and high contrast of Kodak Panatomic-X. Where both print and photographs are mixed on a page, Panatomic-X can reproduce both adequately, although fine print may lack sharpness.

The heart of the system is, of course, the camera, the only suitable type being a single lens reflex unit, of which there are many on the market. No other can be used conveniently. Prices vary greatly, but most are excellent. This writer uses a 15 year old Exakta II with the standard and cheapest f3.5 lens which then sold for \$125. This cost may seem high, but it has taken nearly 30,000 negatives with a total repair bill of \$20 (about \$.005 per picture depreciation).

Other than an f3.5 lens, the camera should have shutter speeds from 1/100 down to at least 1/25 second (1/10 is very handy, though not necessary), lens openings from f16 to f3.5, and it must have a cable release. The above requirements will permit the use of the two relatively slow films mentioned.

Auxiliary equipment must include one or two close-up lenses, a lens adapter ring, shutter release cable, two lights, a footswitch and a copying stand. A medium strength copying lens (Kodak Portra 2+) will usually be sufficient for smaller material, though, if your camera will not normally focus below 3 feet, you may also need a weak lens (Portra 1+). In addition, a third and more powerful lens can be used that will focus down to postcard size. All of these mount on your camera in the adapter ring. Lights can be any clamp-on reflectors with Photoflood No. 2 bulbs inserted. All these should not cost over \$25.00.

Though you can buy copying stands, it is much less expensive to build one. Mine consists of a 30" long vertical steel rod of slightly under 3/4" diameter, fastened near the rear of an 18" x 24" x 1" wood base with a floor flange. The camera is mounted on a 15" piece of the same rod, suitably threaded at one end. A sliding clamp for holding the horizontal rod to the vertical is made of two short sections of 3/4" inside dia-

meter steel tubing welded at right angles to each other, permitting the camera to be moved to any position over the base. Both tubes are tapped for a .25" thumb screw to lock the assembly in position. This stand, taking half a day's work and a trip to a machine shop, cost less than \$5 when it was made. Its only requirements are that it be adjustable and rigid, as the smallest amount of vibration can leave a double image on the negative. Vibration is also the reason for the cable release; do not work without one. Such a stand can be disassembled in seconds and carried to the material.

Film bought in 100 foot lengths must be rewound in the regular 36 exposure (5.5 feet) cartridges, which can be obtained free from the nearest developing shop. A daylight loader will both store the film and enable this job to be done without a darkroom. Here again, to the uninformed, it would seem necessary to have such a room, but actually copying can be undertaken without one and with a minimum of equipment.

Photographic stores sell small handbooks on copying which discuss in detail the mechanics involved and which need not be gone into here, but several precautions should be mentioned. Copying, like anything else, can only be done well with patience. The first step for anyone should be to run a test strip at various exposures to determine the one best for the material involved. This need not be done every time, but it is necessary at the start to get the feel of the camera and film.

The only way to keep expenses at a minimum is to develop your own film in a 35mm developing tank. Preferences vary greatly, but it is strongly recommended that you avoid models with reels made of wire and those "ratchet" types which force the film from the outside in (the latter cannot be reused until thoroughly dried); both can give you headaches in loading. The type which is most foolproof is loaded from the inside out and has a continuous spiral slot in a plastic reel. Most camera stores handle special developing trays, but several square plastic pans from the local supermarket are much cheaper.

While a dark room would be very convenient, this writer has never had one, using the closet of one room fitted with light blocking blinds in which to load developing tanks. Once the tank is loaded, the developing can be done in the kitchen sink, if care is taken to flush solutions from the porcelain. If it is left standing, it will remove the finish and then the paint, although the writer has been using this arrangement for 15 years without difficulty. Lastly, old plastic bleach bottles are excellent for storing developing solutions.

The main point to be emphasized is that camera copying is not a technical field into which only the professional can enter. With a minimum of equipment beyond the camera itself, one can be in business and building up a reference library on film which he might otherwise not have at all. While many may not have the need to copy in this manner, those who have access to material in reasonable volume will find that only this method will enable them to duplicate it inexpensively. Certainly, anyone contemplating buying a 35mm camera for regular picture taking should think seriously about a single lens reflex type which would serve both purposes, for, with the camera available, the cost of photocopying drops to slightly over \$.01 per picture.

REVIEWS

SANTOS-DUMONT: A STUDY IN OBSESSION

By Peter Wykeham. 1963. New York: Harcourt, Brace & World. 278 pages, 30 photographs, bibliography, index and appendix. Price \$5.75.

Looking back across the span of two generations, the pioneers of aviation take on a stature larger than life. A giant in courage and determination was a diminutive man weighing a mere 110 pounds, the Brazilian Alberto Santos-Dumont, first to develop a successful airship by marrying the balloon to the internal-combustion motor and first to fly a heavier-than-air machine in Europe. Victim of the fervent adoration of his countrymen, who insist their hero was first to fly, Santos has been unfairly dismissed as a rich playboy and dilettante. Now, a meticulously researched biography (with much translated from Portuguese) proves he was far more.

Behind all the flamboyance was the unswerving determination of a lonely man to conquer the air. Finding, on his arrival from Brazil in 1891, that aerial voyaging was limited to ballooning, Santos completed his first airship in September 1898. Undaunted by failure and modifying his craft empirically, he attained notoriety with his sixth creation by winning the Deutsch prize on September 19, 1901 with a 7-mile flight to the Eiffel Tower and back.

In his 14 bis, a box-kite canard biplane, "one of the most horrifying pieces of apparatus ever to leave the ground," Santos on October 23, 1906 succeeded in hopping 60 meters. The public hailed him as the first man to fly; the prompt discovery that the Wrights had beaten him by 3 years was a bitter disappointment. Avoiding personal controversy, Santos created the first light airplane, the "Demoiselle," which he offered to all comers; 10 or 15 were built.

Suddenly, it all ended in the Spring of 1910. He closed his hangars and workshops and never flew again. Wykeham believes he has penetrated the secret concealed by Santos' hagiographers--that he developed multiple sclerosis which slowly destroys the brain and spinal cord of its victims. To my medical mind, the diagnosis is correct and the tragic story of Santos' life-in-death existence over the next 22 years rings clinically true.

The author has evolved some provocative conclusions. One may reflect on his belief that "in any case the airplane has declined a good deal in public esteem since those early days." There is also the argument I heard in my own gliding days, "it has been pointed out that anybody who had bamboo, silk and a little commonsense, could have constructed a soaring glider some thousands of years ago." These opinions bear serious consideration, for Peter Wykeham is an Air Vice-Marshal of the Royal Air Force and a career flying officer since 1935. His penetrating analysis of Santos-Dumont is worthy of one of the great pioneers of aviation and forms an outstanding contribution to the history of flight. Douglas H. Robinson, Pennington, N.J.

RECONNAISSANCE & BOMBER AIRCRAFT OF THE 1914-1918 WAR
By W. M. Lambertson; published England, 1962 by Harleyford. 231 pages, about 500 photos. 72 three-view drawings, tables and index, 50s (\$7.00) Plus shipping chgs.

This book continues the now familiar size (8" x 11") and layout of the previous Harleyford books covering, with reasonable completeness, the types mentioned in the title. Generally, RECONNAISSANCE & BOMBER AIRCRAFT is the best of the firm's more recent books, though it has its shortcomings.

After a short introduction, what appears to be 72 basic models are described in detail in 160 pages. Each is illustrated with 5 medium-sized photographs and a

black-line three-view drawing. The pictures are for the most part, very good though a moderate number are obviously copies of copies and very dark. The drawings are well detailed and excellently done, departing from their occasionally used tone drawings which I have never cared for. Most unusual is the selection of the same scale for all 3-views so that 21 are folding, several of triple-page size, with no center seam to mar the page. The one big advantage to their size is that the larger aircraft can be properly detailed. The remainder of the photo page briefly describes each airplane's construction and its operational use.

The latter pages of the book contain several miscellaneous sections, all profusely illustrated. Armament and equipment are covered in 14 pages, aircraft markings in 7 pages, while 10 depict with photographs only about 100 of the rarer types. The last 18 pages carry tables of data on the main types covered.

This reference is well illustrated and worth the price to any but the most critical collector. It brings together in one volume more information than in any other single work on heavier aircraft of WWI. It has its errors, the text is sometimes padded and rambling, and it is not as complete as one might wish. It also has one annoying feature, the grouping on one page of two aircraft which are completely unrelated. Only one, of course, has a drawing. But the index is complete so these scattered references are not lost. RBC

THE BRITISH RIGID AIRSHIP, 1908-1931. A STUDY OF WEAPONS POLICY.

By Robin Higham. 1961. London: G. T. Foulis & Co., Ltd. 426 pages, 72 illustrations, drawings, bibliography and index. Price \$9.00.

Dr. Robin D. S. Higham, Associate Professor of History at Kansas State University, has taken the British rigid airship program of 1908-1931 to illustrate the factors influencing weapons development. In the process, he has written a soundly researched history of all 17 British rigids.

The narrative deals more with fluctuating and opportunistic policies, vacillating and technically ignorant policy-makers and the feast-or-famine atmosphere of wartime expansion and peacetime retrenchment. In great measure, the British rigid airship program was a reflex response to German success with Zeppelins. Opinion in the British Navy, the intended user of the rigid, was divided with Admiral Fisher, the First Sea Lord, exaggerating its capabilities and others denying that it had any value whatever.

Early German successes stimulated the construction of Airship #1, the "Mayfly," which broke her back on Sept. 24, 1911. "The work of an idiot," remarked the chairman of the Naval Court of Inquiry, while the political head of the Admiralty, Winston Churchill--the chief villain of the book--favored airplanes instead. Nonetheless, a second rigid airship was ordered. Churchill stopped her construction in March 1915, feeling the war would be over before her completion. "Once again a short-term policy created a long term deficit." German Zeppelin successes caused this decision to be rescinded, but #9 did not fly until November 27, 1916. Four modified sisters were on order when L 33 fell into British hands September 24, 1916. Higham concludes this actually prevented the Grand Fleet from having an airship arm during the war. Inferior British rigids were cancelled, but no copies of the L 33 were delivered until 1919. After the war, the remaining airships were sold, scrapped or laid up. The biggest and latest, R38, was sold to the U.S. Navy, going down on August 24, 1921, killing 44. While the design was faulty, this reviewer considers the operators showed inexcusable bad judgment in making high speed, low altitude turns which overstrained the hull.

The last phase, the "commercial" scheme for linking

the Empire by air, produced at tremendous cost 2 ships, R100 and R101. The latter, on her first long-distance flight, crashed near Beauvais, France in 1930, killing the Secretary of State for Air and 45 others. This disaster put an end to the British airship effort. Hingham is severely critical of the multiple experimental innovations in the R101, of the lack of checks on her state builders and of the Air Minister for insisting that the untried ship fly to India to suit his political program.

However, the Vickers firm, in competition with the Government airship works, built excellent rigid airships to the design of the inspired Dr. Barnes Wallis. R80, the first streamlined rigid, was Wallis' creation, as was R100, whose successful round trip to Canada contrasted with R101's failure three months later. Dr. Hingham reveals that through an Intelligence coup the wooden-hulled R31 and R32 were built to designs of the Schutte-Lanz "e" type, smuggled out of Germany by a mysterious Herr Muller. These and other craft of the British program are fully described in Dr. Hingham's book and the 72 illustrations include a photograph of each of the British rigids.

Douglas H. Robinson, Pennington, N.J.

HAWKER AIRCRAFT SINCE 1920

By Francis K. Mason; published London, 1961 by Putnam. 475 pages, 380 photos, 70 3-view dwgs, several extensive lists, indexed. 63S (\$8.82) plus shipping.

This book is one of a series of Putnam books which will eventually encompass all major British aircraft manufacturers. The size and general format are patterned after those of the previous aviation volumes by the same publisher, BRITISH CIVIL AIRCRAFT 1919-1959? etc.

Because the complete files of the Hawker Aircraft, Ltd. have been made available for this undertaking, there is a large amount of previously unpublished information between the covers. Though there have been other histories of the Company written, nothing approaches this one in quality.

The first 80 pages are devoted to a history of the company, the designers, test pilots, officials and significant designs around which the organization revolved. It is filled with old factory shots, photos of mock-ups, assembly lines, test pilots and others. The next 284 pages are devoted to Hawker aircraft arranged in chronological order from 1920 to 1961. Photographs depict nearly every sub-model and detailed drawings are included for all major types, many including 6 or more views per drawing. The specifications are comprehensive and have come from official test data primarily (even the source is fully referenced). The photos are uniformly excellent and Bradford's drawings accurate.

The following 80 pages list by type the serial numbers of every individual aircraft and as much as is available on the squadrons to which they were delivered, etc. Appendix A is a list of unbuilt projects with 16 drawings. Other appendices cover test pilots, factories and customers. A true collector's item. RBC

PLOESTI, THE GREAT GROUND-AIR BATTLE OF 1 AUGUST 1943

By J. Dugan & C. Stewart, published 1962. 407 pages, 119 photos, a number of maps and sketches; includes a comprehensive index and an 82 page listing of participating crewmen. \$6.95.

This impressive book covers one of the most catastrophic raids of WW II in more detail than any other publication to date, but detail is not a measure of quality. The story begins with the days immediately following Pearl Harbor; traces the Halverson Detachment's first small attack on Ploesti; and other heavy bomber operations in the Mediterranean area that lead up to the comprehensive account of the Ploesti attack, which fills the majority of the book. The book also

presents considerable information on the Axis side of the raid, and follows the captured crewmen through their ordeal following the attack.

The author's have compiled the majority of this story from personal interviews with participants on both sides and woven the pieces into a comprehensive eye-witness account that makes the reader almost a part of the mission. Nearly every participating aircraft is mentioned somewhere and the names of the majority of crew members are included in the colorful accounts that take you inside many of the raiders. Likewise, detail of the Roumanian side is more comprehensive than anything yet published.

With this background, it is unfortunate that the authors have felt the need to add additional coloring to the account, such as describing the disintegration of a flak tower with 50 calibre fire from half a mile away. They erroneously credit the 15 June, 1942 attack on the Italian Fleet with 2 major ships stopped dead in the water in flames, indicating some very basic facts have not been checked against easily available official records. Actual damage consisted of the paint being blown off the forward turret of the "Littorio."

This volume is very difficult to set aside once it is begun and will be highly interesting to many readers, but one should recognize that a compilation of personal accounts is not necessarily the historical ultimate. Certainly the book's strong point is the pictorial story of the raid, comprising over 100 photos, the finest I have seen in a book of this type. RBC

U. S. BOMBERS Bl-B70

By Lloyd S. Jones. 1962. Los Angeles: Aero Publishers, Inc. 237 pages, 200 photos, 74 3-view drawings. Price \$7.75.

Many AAHS members with collector leanings have probably tried to assemble a complete collection of 3-views, specifications and photos of all Army/Air Force fighters, bombers, transports, etc. Lloyd Jones has now covered the bomber field and made the results available.

This book is a typical Aero Publishers production; overall size is 8.5" x 11", paper and printing methods are similar to their previous volumes. Thumbing through the copies of Bl-B70 and the same publisher's U. S. CIVIL AIRCRAFT Vol. I, the latter shows a consistently better standard of photographic reproduction, though the 200 photos used in U. S. BOMBERS are well selected. While the 3-views are full page size, the end plates show the whole series in side views to a standard scale. The drawings are far better representations of the aircraft concerned, than those found in the same publisher's P-1 TO F-107.

Accompanying each of the 3-views are from 2 to 5 photos showing different versions of the basic bomber or a scale model of types not built. A brief description fills out each section, including typical dimensions, weights, armament, performance, numbers built and some historical material. This information will not meet the needs of those who want complete details on each version or comprehensive histories of the aircraft types. The emphasis is on providing a thumbnail sketch in words and illustrations covering each series.

Missiles of the "B" (SM or GAM) series are covered, if they came before B-70, but not those that received subsequent number assignments. Complete model designations, including block numbers and manufacturer's letters, are used for many photograph captions, but the author is inconsistent and adequate description is not given of USAAF/USAF designations. Nor are the inclusive and exclusive aspects of the section titles entirely consistent. For example, under "YB-24" one finds the Liberators through the B-24G, while the next section begins with the B-24J, leaving the "H" to the reader's intuition. Generally, the author's grouping, as used with the 3-view presented, makes good sense.

A more thorough review of details might have eliminated some errors which are scattered throughout the text; for example, the "Lucky Lady II" global flight was made using hose refueling rather than the flying boom system. While this reviewer cannot pass judgment on either the text or illustrations for many of the never completed bombers, those few with which he is familiar are quite accurately represented. In particular, the B/RB-45A is well illustrated, this plane brings back memories of the reviewer's first year in the industry.

All in all, addition of this volume to the shelves of an enthusiast without an extensive library will represent a step forward in covering the B-series bombers. While lacking in detail due to its broad scope, the book's forte is certainly describing and illustrating for the first time the cancelled models about which very little information is available.
Harold Andrews, Washington, D. C.

THE SKY SUSPENDED

By Drew Middleton, Pyramid Books, 444 Madison Avenue, New York 22, N.Y. Price 50 cents.

It is rare that such a prosaic subject as the Battle of Britain can be presented in an interesting and factual narration. Drew Middleton, the author, has done exactly that, and in doing so, has contributed to the documentation of a crucial period in the history of Britain. This is no story of heroics, but a story of the aerial factors of life as they existed in Britain after the evacuation of Dunkirk.

Drew Middleton was an American correspondent for Associated Press, stationed in London from 1939 to 1942 and witnessed the Battle of Britain first-hand. The story starts with the fall of France and crisis of Dunkirk. Alone and unafraid, the diminutive Fighter Command (compared to the Luftwaffe) was all that stood between the victorious German forces and the freedom of Britain and the rest of the Free World. The story quotes Winston Churchill and his inspiring speeches, the headaches of production, and the new discovery of how Radar could be used to advantage to alert the interceptors. Each raid is recounted in detail and the rate of attrition of Fighter Command and its adversaries.

It gives tribute to the Air Vice-Marshals who directed the fight, and also ventures to opine on the shoddy treatment that Marshal Dowding received from his professional colleagues.

A fine feature of the book is a chapter devoted in summary form to the mistakes of each adversary. Of course, Reichsmarschall Herman Goering is the butt of the German Air Force errors. And while that bloated ersatz gaullier, no doubt infected with his own vanity, was much to blame for the German mistakes which directly affected "OPERATION SEA LION" (the German invasion of Britain) and its subsequent cancellation, Goering was not what I consider a veteran airman. He was a fighter pilot in World War I and was still fighting World War II with experience obtained in the earlier war. This experience was not applicable, and so when the German Air Force nearly vanquished the Fighter Command, Goering was unable to detect the turning point of the air battle. He was not able to evaluate the results of the air attack and was carried away many times with an unfounded optimism.

Little did the Germans realize how close they came to deleting Fighter Command. Had their evaluation of the results been accurate, another month or so would have erased Fighter Command from the skies and so the British would have perhaps eventually capitulated. The evaluation of results was left to immature airmen, who, not knowing much of air strategy, thought that terror bombing of civilians would cause Fighter Command to falter. Such was the German idea of a blitzkrieg from the sky. The strategic implications seem to have been over-

looked.

Those who are interested in this phase of RAF history should realize that accounts of any event are those of the individual concerned with writing about it. But Drew Middleton has not colored the events with glamor or optimism. He has written the book as he saw it, and no doubt he has recorded these accounts accurately.

Drew Middleton has contributed a great story to the history of Air Warfare. It would be well to consider this a "must" for every student of aerial warfare, including professional combat airmen.
Willis L. Nye, Hayward, California.

PER NOCTIM PER DIEM

By E. N. Tucker and P. M. J. McGregor, 1961. Pretoria, South Africa: 24 Squadron Album Committee. 291 pages, 286 photos, 3 maps, roster. \$9.00, incl. Postage, from Major P. M. J. McGregor, Air Force Headquarters, Potgieter St., Pretoria, Transvaal, South Africa.

After fourteen years of compilation, the authors and Capt. Horace Barton have published one of those rare gems of fact and material that is known as a "unit history". In this case the unit is 24 Squadron of the South African Air Force, and that in itself makes the book unique. Beside the history of the unit and its men, that takes up the first 182 pages, there is a long chapter concerned with the songs, poems and personal narratives of places and events written by the men.

From its beginnings at Durban, South Africa, 24 Squadron is followed into Kenya where it saw its first action in Martin Maryland light bombers in early 1941. By May 1941, however, 24 Squadron was in the Western Desert flying against the Afrika Corps.

During October 1941, the Squadron became the first unit to equip with the new Douglas Boston light bomber. With these aircraft it took part in Operation CRUSADER which pushed Rommel out of Libya and then was caught up in the great German advance of May and June 1942 that led the Afrika Corps to El Alamein. Its Bostons took part in constant operations during the British retreat, which is colorfully called "The Gazala Gallop", and had a major hand in stemming the tide of battle before it reached Alexandria. Also during this period, the unit acquired a befitting nickname, "The 18 Imperturbables" given in honor of the extremely tight formations the South Africans flew in attacks on the enemy despite the fierceness of the opposition.

Following the stalemate at Alamein and the subsequent British breakthrough the unit hopped across North Africa taking part in operations until the Axis forces in North Africa surrendered. Next came operations in support of the Sicilian landings, and in August the Squadron operated from Malta before moving on to an airfield in the Foggia Area of Italy where it flew until 8 November. At that time 24 Squadron was reequipped with Martin Marauder bombers and pulled back for special training and operations in North Africa.

From the gloom of those days in early 1944, through the Italian campaign again, from July 1944 until V-E lay, the Squadron completed a brilliant war record.

Besides a narrative treatment of all its history, a running account of operation by operation is given at the back of each chapter which greatly adds to the overall worth and power of PER NOCTIM PER DIEM. For the American historian there are a number of mentioning in the text of U. S. fighter and bomber units with which 24 Squadron flew and fought.

In summation, this is an excellent book that would be a proud addition to any fully rounded aviation library and a must for a World War II collection. It is briskly and probingly written and is illustrated by a fair number of never before published photos of SAAF aircraft. However, those interest in this book had best hurry for the supply of copies is almost gone.
Kenn C. Rust, Glendale, Calif.