

AIR RACING- GREAT SPORT

By FRANK T. COURTNEY

With the emergence again of the sport racing airplane in the United States and abroad, it is appropriate to hear from Mr. Courtney on the subject of sport racing. As winner of the King's Cup Race of 1923, and the London Aerial Derby of 1920, and many other races before and since, his credentials are impeccable. He is shown in the picture opposite, tall, rumped and clutching goggles, on the left upon the occasion of presentation of the King's Cup. We are proud to present his article on air racing. Great sport, indeed!



When the airplane first appeared, optimists predicted that it would one day be capable of unlimited speeds which would eventually make it the ideal and ultimate device for racing. Air racing, therefore, quickly became an established sport even while airplanes themselves were still too primitive to be of much use for anything else. For long years the practice of racing, in many forms, kept pace with the general progress of aviation; but the time came when complex technologies, official controls and high costs combined to eliminate most of the sporting ingredients of flying contests, and the great days of popular air racing faded into the past.

Still while those days lasted, racing contributed hugely to the development of aircraft, engines and airmanship, and history should deal with it as something more than mere entertainment.

In the earliest days of racing, especially in the long cross-country events, the prize rarely went to the swift. Engines were hopelessly uncertain anyway, and they regularly broke down or broke up when called upon for any extra effort; a resulting forced landing was apt to do away with parts of the airplane or all of it, occasionally including the pilot. Air navigation was a mystic art and pilots lost their way in fair weather or foul, while gusty winds were often more than primitive controls could cope with. The winner was more likely than not to be the pilot whose equipment survived long enough for him to find his way, with luck, to the finishing point.

Gradually, however, equipment improved to the point where speeds began to matter, and from then on the speeds of racing planes became a technical indicator of the practical speeds that military and commercial aircraft might later hope to attain. Yet sporting uncertainties long prevailed, because real racing was invariably a full-throttle dash through all weathers and conditions which regularly strained the best of new equipment up to and beyond its normal capacity.

These personal reminiscences may be clearer if I recall a few bits of factual history which sometimes become submerged. In the years before World War I and in the decade or so following it, America took little part in the development of sport racing, whereas, in Europe, from about 1910 onwards, it was a widely popular sport, nationally and internationally. Behind that situation was the fact that, prior to the events

that surrounded Lindbergh's famous flight, the United States Government made no serious effort to develop a sound aircraft industry or to encourage civil flying, so that air racing had nothing much to draw on, technically or financially. This condition persisted until the "Lindbergh Boom," starting in about 1928, triggered an explosive expansion in all fields of U.S. aviation, presenting the sportsman pilot with a wide variety of competitive airplanes such as had never been available to him before.

Another severe deterrent to American sports flying was the U.S. Government's peculiar custom of pursuing national aviation prestige, not by building up an industry, but by regularly entering military planes and pilots in air races and other sensational spectacles; and since it was virtually hopeless for civilian pilots and private enterprise to contend against government resources, the creative inspirations of competition and the sporting spirit were stifled - while at the same time the industry gained negligible nourishment from the few special types involved.

In Europe, on the other hand, years before World War I, international political rivalries forced major nations to encourage aircraft industries which, if financially feeble, were necessarily highly versatile in the pioneering of new designs of aircraft and engines. Numerous companies in different countries produced numerous different types which, being always hopefully available for general sales, provided a widely varied "field" of contestants for the frequent air races of the period. If a military pilot wanted to fly in such races (and many did) it was as a sportsman pilot on a privately-owned airplane.

The first air race I ever witnessed - from a distance - was the 1910 Circuit of Britain which, incidentally, was won by a French airplane and pilot. It was when I joined Grahame-White's company at Hendon, England, as an apprentice in 1913, that I encountered air racing as a regular part of life.

Hendon Aerodrome, about 8 miles north of London, had become an immensely popular center for all kinds of flying. Every Saturday and Sunday, and sometimes Wednesday, weather permitting, we put on shows that always included two or three pylon races around the field. At a time when 65 miles an hour was a creditable full-throttle speed, an air race around a three-mile circuit, with five pylons, produced the

general atmosphere of a Roman chariot race. The public got to know the different airplanes and pilots, bookies set up stands in the enclosures, and regular race-track rituals were observed. On public holidays huge crowds attended, and this introduction of the masses to the still mysterious business of aviation was doubtless of substantial benefit to Britain in the first air war which — though we didn't know it - was drawing closer. At one time or another almost every type of aircraft in pre-war Europe - and there were dozens of them - came along to show itself off by taking turns around our pylons.

Regular or frequent performers were: various Bleriot versions (50 or 80 Gnoms, or Anzani); Maurice Farmans (70 Renault); Henri Farmans (80 Gnome); Grahame-White school boxkites (50 Gnome), the big 5-seat "Aerobus" (100 Green), and the built-from-scrap "Lizzie" (50 Gnome); several Caudron variants (Gnome or Anzani) widely used by schools because they were cheap and easy to build and repair; George Beatty's Wright biplanes (50 Gyro); Breguets (80 Salmson) with a one-piece tail hanging on the fuselage with a ball-and-socket joint; Morane-Saulniers (60 or 80 LeRhône); the Dunne super-stable tailless biplane; Barber's "Valkyrie" canard; Dyott's little home-made monoplane. (Many of these, though of French design, were built in England under license).

From factories at various British airfields came an assortment of planes from Avro, Bristol, Handley-Page, Sopwith and others, especially when they had a new product, and on occasion Otto Thelen turned up from Germany on his Albatros. John Porte (later closely associated with Glenn Curtiss) on his Deperdussin was a spectacular pylon-turner, and there were regular curios such as the Paulhan-Tatin with its shaft-drive to a tail-mounted propeller, and the Sanchez-Besa which actually had wheel-brakes and an engine-starting crank in the nacelle.

Hendon was usually also the start and finish point of several national and international, long cross-country races which had already been established as regular annual events, such as

Courtney with the Martinsyde "Semiquaver" (Hispano-Suiza engine), just before winning the London Aerial Derby, July 1920.



London-Paris, London-Manchester and the Aerial Derby, and we apprentices were invariably called on to exercise a variety of functions in connection with the events. All such affairs were, of course, suspended at the outbreak of war in August, 1914, but racing was resumed with enthusiasm in 1919 when the war was over, by which time I was myself an experienced pilot, keenly anxious to share in this racing game.

I won the first race I entered, a major event, the London Aerial Derby of 1920. I won it with an improbable start, some sort of a speed record, and a resounding crash at the finish.

The London Aerial Derby had begun as an annual event in 1912, a race around the London area over a course varying from 100 to 200 miles. The start and finish at Hendon was a great social event, attracting numerous celebrities as well as large crowds of the public. As a pre-war apprentice I had natural dreams of one day flying victoriously in that race, and for the 1919 event I thought my chance had come as de Havilland's pilot with the powerful DH-9R, but we could not get ready in time.

For the 1920 Derby I hunted around for a promising mount, but it seemed that all the best airplanes already had their pilots, and I resigned myself to being a spectator. Late in the evening before the race, Freddie Raynham telephoned: he had expected to fly the Martinsyde "Semiquaver" the next day, but he had just had a minor crash while testing another airplane and had wrenched his knee too badly to allow him to fly. Would I care to take the Semiquaver? He warned me that, apart from the fact that I had never flown it, he himself had not yet had time to complete its initial tests, but if I cared to take a chance, I might have an hour or so in the morning to give it a quick try-out before the race.

The Semiquaver was by far the hottest prospect. It was a tiny, beautiful biplane with a 300 hp Hispano engine, built for speed. It was a brand new design and Freddie had been able to give it only a couple of short preliminary tests before it was set up on a stand at the Aero Exhibition in London. Now, practically untested, it was to put its tremendous speed into a full-out race of two laps, each of 100 miles with six turning points, around London.

Early next morning I went out to Hendon. The Semiquaver had been dismantled from the Olympia Exhibition Hall, and the mechanics were now assembling it on the field. If they worked fast, I might have an hour or two to make a short flight and at least find out what it felt like. I discussed it with the engineers, who told me all the things about it that still had to be tested. I was already a trained test pilot, and I knew that if I flew it now I was bound to find something that needed some essential change or adjustment — which might take hours or days. And that could well leave me out of the race. I decided to "go for broke," and to take off into the race with no previous flight.

The dispatcher's flag dropped. I took off, swung low around the central pylon, and headed for Brooklands, the first turn point about 20 miles to the south. I was combining a test flight with a high speed race, and I soon began to make discoveries. First, the propeller pitch was too high, overloading the engine, cutting down revolutions, and raising water temperature. Then the radiator was too small, with an overflow pipe so located that the propeller swirl threw any steam or boiling water right at the open cockpit. I was to find out later that the landing gear shock absorber had been pulled up tight to allow it to sit firmly on its exhibition stand, and nobody had taken time to slack it off; in other words, on this fast-landing airplane there was no effective shock-absorber.

I was certainly the busiest man in the air that afternoon. To begin with, I had to watch every detail of an entirely unfamiliar airplane as I skimmed the trees and housetops of suburban and rural scenery at not much under 200 miles an



Courtney crashed the "Semiquaver" shortly after the finish of the 1920 London Aerial Derby, with radiator cooling and landing gear problems. At left of picture, backs to camera, Tom Courtney (brother), Miss Filby (Frank's fiancée) and Fred Raynham (arm-band) Martinsyde pilot.

hour. Then there was the three-handed job of juggling control-stick, throttle and map, for I had had no previous chance to make a preliminary trip over the course. Mostly I was occupied with the throttle, trying to hold all the power I could get while keeping the needle of the water temperature gauge at two or three degrees below boiling. Now and then, when I took a few seconds out to examine the map or the landscape, a gush of steam would warn me to jerk back the throttle to let things cool off a bit.

Still going strong, I reached Hendon at the end of the first lap, where I had to circle the pylons before going off again. At the speed I was doing I had to pull the Semiquaver around so hard that I had my first experience of "blackout," in which centrifugal force drags the blood from the brain. This now-familiar phenomenon was quite unknown at the time, and I did not tell anyone about it for a long time afterwards — afraid the licensing medical people might find that it indicated something wrong with me.

The second lap was easier; I had mentally registered the landmarks, and at least I knew my way. I swung hard round the Hertford railway station onto the last leg. As the finish point came in sight a few miles away, I decided to let the temperature go. I shoved the throttle full open and let her rip. As I shot across the line, an easy winner, I had to duck low in the cockpit as clouds of steam and boiling water spewed around. I had figured that, once I closed the throttle for landing, the steam would let up. It did somewhat, but it still came out in gusts that made vision uncertain.

Feeling sure there was too much water lost to go around again, I tried to land as short as I could — and I happened to pick a rough patch at the near end of the field. When I hit a little ridge, the unadjusted shock-absorbers absorbed no shock; the plane bounded high, turned over, and skidded along on its back, the cockpit almost level with the upper wing. My head smacked on something hard, and for a little while I watched a brilliant fireworks display. Then somehow I squirmed out of the small gap between the cockpit and the ground just as the stretcher-bearers of the St. John's Ambulance Corps arrived breathlessly alongside to pick up the pieces. It turned out that all I needed was aspirin.

In 1922 British sport racing attained the dignity of Royal patronage, when King George V presented a silver cup for a race around Britain. Thereafter it became an annual event, replacing the Aerial Derby as the great race of the year. I won the King's Cup in 1923, but it wasn't easy; my Armstrong-Whitworth "Siskin" fighter, cleaned up for racing, was good

for about 175 mph, but its bad-mannered Jaguar engine, a double-row radial which could deliver 350 hp when it felt like it, kept threatening to quit the job before finally consenting to drag me home ahead of the others. I flew King's Cup races in several other years, but even when I had a "sure" winner I didn't win. Accessories and components, pushed too hard, can too often tell a pilot where he gets off.

Our racing enthusiasm of those days could not disguise the fact that the game was beginning to look expensive, and in 1923 an event occurred which drew violent attention to that factor. The U.S. Government shattered international sporting traditions by proposing to enter its Navy seaplanes and pilots in the Schneider Trophy races. The International Race Committee for that year, the British Royal Aero Club, was flabbergasted. True, there was nothing in the rules to bar governments from competing but this was because, in the ten years or so since France's Jacques Schneider had initiated those races, it had never entered anybody's head that any government might challenge civilian sportsmen with the advantage of its superior resources in a purely sporting contest. After much caustic discussion, the Committee decided that it would have to accept the U.S. entry with what good grace it could — and the Americans, predictably, walked away with the Trophy.

To this day many American "histories" hail this as a great achievement but, as unfinished business, it was far from that. The British Government declined to interfere in an affair which it regarded as none of government's business, but eventually it had to yield to "patriotic" agitators and reluctantly put the Royal Air Force onto the job. Britain recovered the Trophy outright with three successive annual victories. The net outcome of this sorry episode was that the sport of seaplane racing was swamped out of existence by a pointless flood of government expenditure. Major air racing lost much of its sporting glamour — and the once-proud Schneider Trophy wound up pathetically on a stand in a Royal Aero Club anteroom, where it served as a convenient hat-rack for members passing through to the bar.

The racing enthusiasts began to realize that, as faster airplanes with more powerful engines came along, the sport would become too expensive for wide popularity. It happened that the British Air Ministry was doing some heavy thinking along parallel lines. Though not concerned with the sporting spirit, nor with the windy glamour of national prestige, it was making the hard-headed assessment that a widespread program of private and sporting flying could build a solid foundation of civil aviation skills. These could rapidly be converted to the service of the Royal Air Force in the event of future military emergencies, as well as opening up new opportunities to the aircraft industry. But the problem was difficult available funds were low, and government encouragement would have to take the form of some inexpensive method of inciting the public and the industry to develop their own programs.

Aviation had gone into the war with nothing that could be called a warplane, and had come out with nothing but warplanes. Hundreds of men who had become pilots during the war wanted to keep on flying, but there were no aircraft that the ex-Service pilot could afford. War surpluses were cheap but even relatively low-powered trainers were much too costly to operate and there was nothing else. In the deflated aircraft industry there was little money floating around for such speculative ventures as producing private aircraft. Market requirements and prospects were far too nebulous, and anyway no suitable low-powered engines existed — another costly speculation. Then again, few wartime airfields remained in operation, and they were usually miles from anywhere.

The Air Ministry met these problems ingeniously, effectively and at almost negligible cost to the government. The Ministry

concocted specifications for its ideas of what low-cost private airplanes should be and offered prizes to be awarded in public competitions under Royal Aero Club (not Air Ministry) supervision. In addition to cash prizes, winning airplane designers were to receive small government orders. The contests, lasting several days, were first held in 1925 at Lympne, and they drew huge and enthusiastic crowds, British and foreign. Aircraft manufacturers, attracted by the official interest and accompanying publicity, had designed, built and entered about a dozen little aircraft. The engine problem had been taking longer and most entries were fitted with modified or boosted motor-cycle engines. The technical tests were enlivened by full-throttle races over local courses of various lengths. In several of these my own midget mount, Pixie II, gave me some of the best fun I have had in flying.

The Parnail "Pixie" was a single-seat, low-wing monoplane of ingenious design, with sharply tapered wings of 18 feet span, powered by a Blackburne 1000 c.c. motor-cycle engine geared down to a matchstick of a propeller. Flying it was rather like flitting through the air on a noisy postcard. The pilot's goggles were its only windshield. Wide open it could do something around 70 mph, but the engine did not care too much for full-throttle loads and it was liable to cease operations at inconvenient moments. In two races, heavy rain chewed down my wispy propeller to a frazzled club, and I settled down among the sheep grazing on the South Downs. At the end of one race I was heading the Pixie for the finish line a mile or so away, flying about 50 feet up over closely-spaced hedges, ditches and outhouses, when I smelt burning wood. This puzzled me, because there was no wood in the steel fuselage structure. Suddenly the engine screamed into overspeed and, as I snapped back the throttle, I saw a blurred mass shoot on ahead and then come straight back at me as I overtook it. By the time I had ducked and heard something bang on the fuselage behind my head, I knew what it was: the friction of torque reaction on a possibly loose propeller boss had burned through the wood around the bolt holes, until the propeller was loose enough to take off on its own.

There was no place where I could possibly have landed without a crash except a long narrow strip planted in vegetables - and, lo, there it was, straight ahead of me. All I had to do was to keep going and land. As I climbed out of the undamaged plane I heard a shout from behind and turned around to see a small farm boy running up with my little propeller in his hand. He said he had seen something fall off my plane, and was this it? I said thank you, yes it was.

Those contests proved that light aircraft to Air Ministry specifications, as they stood, were too light to be practical,



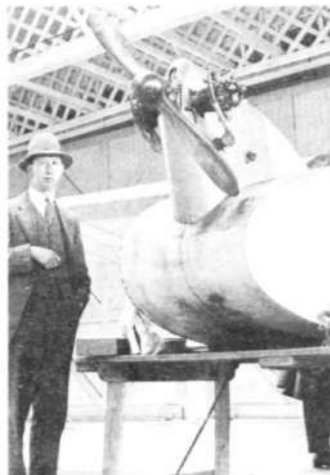
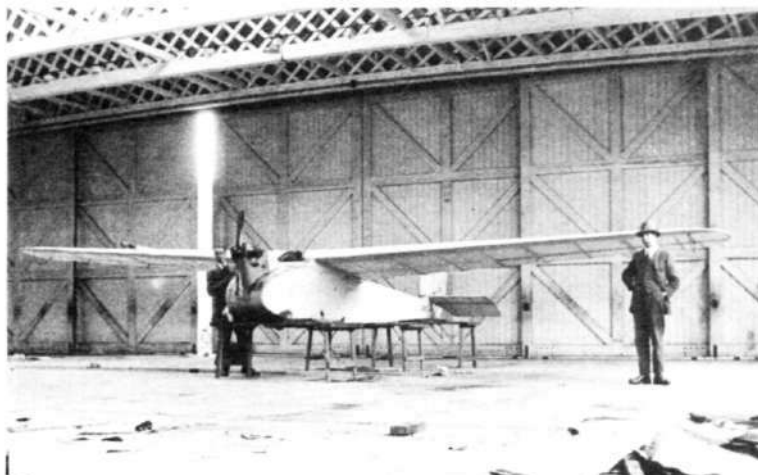
The Parnail "PIXIE II" was flown by Courtney a number of times at lightplane competitions. He is shown here and below in the cockpit, with goggles as the only windshield. Above photograph taken at Lympne, 1925. The engine was a Blackburn motorcycle engine,

but that didn't matter much; the ball had started rolling and it grew to a snowball. The lightplane was in business, somewhat larger models were produced with newly developed engines and several of them, notably the D.H. "Moth" and the Avro "Avian," were to become familiar in American skies. And sport air racing had found a new basis for popularity.

Meanwhile the second half of the Air Ministry's shrewd policy had been materializing, the organization of nationwide flying clubs. A small subsidy from the government was enough to stir local enthusiasm and private enterprise into the formation of clubs by numerous cities and towns, as well as Universities and other groups, all over the British Isles. They were real clubs, with club-houses, restaurants and other amenities of club life, where members could rent lightplanes for local flying or for visits to other club fields where they could count on normal airport facilities. As a clever extension of this plan, the government paid a modest bonus for each new club-trained pilot - and many an R.A.F. pilot fighting the Battle of Britain had taken his first lessons at his local club.

Inevitably, inter-club races and contests instigated a range of flying activities that could otherwise hardly have existed, and such activities soon became international. A popular feature of the frequent inter-club meets was racing around





The English Electric Company's "Wren" lightplane with Douglas motorcycle engine (designed by W.O. Manning) was created as a result of interest in lightplane competitions. The "Wren" was designed by N.S. Norway, later to become famous as the author-novelist Neville Shute. He is shown in the photograph at center. Maurice Wright, who piloted the "Wren" in the Light Plane Competition at Lympe in 1925, is shown at right.



At left, believed to be the Hawker lightplane with Fred Raynham in the cockpit, Lympe, 1925. At right, the ANEC (Air Navigation and Engineering Co.) lightplane at Lympe, with pilot, Shackleton?

Below left, the Gloster "Bamel" racer of 1923, Napier "Lion" engine. Courtney later flew this airplane on floats in trials for the Schneider Trophy. Right, the Martinsyde F.4 "Buzzard," Hispano-Suiza engine. This was flown by Courtney in the 1926 King's Cup Race, but was forced out by a broken valve and landed at Duxford.



closed courses within sight of the spectators on the field. High speeds being now not often the main consideration, most of these races were handicaps, and the handicapping officials became so well familiar with the competing airplanes and pilots that they could guarantee to bring the planes into a bunch for a tight finish, provoking a close struggle for air-space which led to increasingly dangerous situations. In 1927 I won a race at Bournemouth only to discover that Longton and Openshaw had collided a few feet behind my tail and both had been killed.

My first races in America were in the National Air Races at Cleveland in 1929, by which time a very large number of various types of planes were available to civil pilots. After the Miami-Cleveland race, which earned a Prohibition-sized cocktail shaker, I entered a couple of hectic events fought out over a 15 lap, 5 mile course around 5 pylons. By now pylon racing had become something of a madhouse business. On top of earlier hazards, there were now cabin airplanes with window structures, and often hazed panels, which further impeded turning view. Moreover, many new pilots had entered the game, full of aggressive enthusiasm but with not much skill or

judgment. They had no idea how to turn pylons cleanly, they climbed, dived or zigzagged around them, giving more peaceful contestants the choice of getting out of their way or getting killed. On the last turn of the last race, cutting the pylon as closely as I dared, I found that someone with a small cabin plane was apparently trying to put his left wing-tip into the open cockpit of my Moth - although the chances are that he never even saw me. To get clear, I had to haul in even closer over the top of the pylon. Though I "won" the race, I was disqualified for cutting the turn. My teammate for the American Moth Company, Russell Brown, had a couple of feet taken off his wing tip, but he got down all right. Fun is fun, but this was becoming too much of a good thing.

Not long afterwards, American newspapers gave wide publication to photographs of a cabin airplane, its tail cut off in a pylon-turning collision, swooping helplessly through the air before plunging fatally into the ground and of the gruesome results. This was about the end of popular pylon racing; thereafter this great sport was banished in obscurity, as far as widespread public interest was concerned, by stifling official restrictions.

ABOUT THE AUTHOR

To anyone who has flown in the period from 1913 until almost the present, Frank T. Courtney will require no introduction. As holder of the oldest active pilot's license, continuous from 1914 until 1967, he is a living legend; he has flown with or personally knew most of the famous aviators of the world. For one rejected (for poor eyesight) on his first try for military pilot, he has done an amazing amount of flying as a military pilot and an untold number of hours in test flying, transport, barnstorming, aerobatics, exhibition, demonstration, racing, trans-Atlantic, trans-Pacific ferrying, and you-name-it kind of flying.

Mr. Courtney's F.A.I. license #874 dates from August 1914. He was a pilot in No. 3 Squadron, Royal Flying Corps in 1915, test pilot at the Royal Aircraft Factory, combat pilot again in Nos. 20, 45, and 70 Squadrons, and Fighting Instructor for the Air Ministry. He was among those who flew the first scheduled air transport line in the world (the Paris Peace Conference 1919), test piloted the early experiments in the Cierva autogiro, flew Schneider Racers, attempted the east-to-west transatlantic crossing in 1927, served as advisor to New York investment firm in the financing of new aviation companies during the 1927-30 "boom" period, was Technical Advisor to Charles L. Lawrence and the Curtiss-Wright Corp., and represented the Air Ministry in the U.S. on flying boat and bomber procurements in WWII, later ferried many bombers on over-water routes to the South Pacific.

Mr. Courtney was a featured speaker at the Fighter Aircraft History Symposium sponsored by AAHS at El Segundo, California in October 1968. (The text of his address was given in full in *Air Force and Space Digest* October, 1969). He is the author of many articles on aviation during his active career in aviation spanning more than fifty years. And he was married in 1921 to his lifelong companion and sweetheart, Constance "Ginger" (nee Filby), herself a famous woman pilot of the early 1920's. He is shown here, in the photo at left, with another famous pioneer, Grover Loening, upon the occasion of a meeting of the Historical Branch, I.A.S. (now AIAA) in 1953.



ORAL HISTORY LIBRARY

For almost twenty years various Members of the Society have made tape recordings of events and interviews and have privately collected these against the day when a formal Oral History Program could be established. The first steps in that direction have been taken and informal ties with other history groups are being explored to make recordings generally available for use, within restrictions.

The initial move began recently with a cataloguing of tape recorded interviews with pioneer aviators, and the results were fed into the Oral History Association to be included in

ED,TAPE RECORDINGS SOLICITED

its forthcoming compendium of recordings. The compilation was done by William W. Clarke, an Associate Editor of the *JOURNAL* of AAHS, who has made recordings of most, if not all, of the aviation historical meetings and symposiums in Southern California since early 1950.

Members are requested to forward to W.W. Clarke, c/o P.O. Box 99, Redondo Beach, CA 90277, a brief description of any tape recording which should be considered for inclusion in the AAHS Oral History Library.