

COMPETITION NEWSLETTER

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ACADEMY OF MODEL AERONAUTICS

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WASHINGTON, D.C. 20005



A World Record in Your Future?

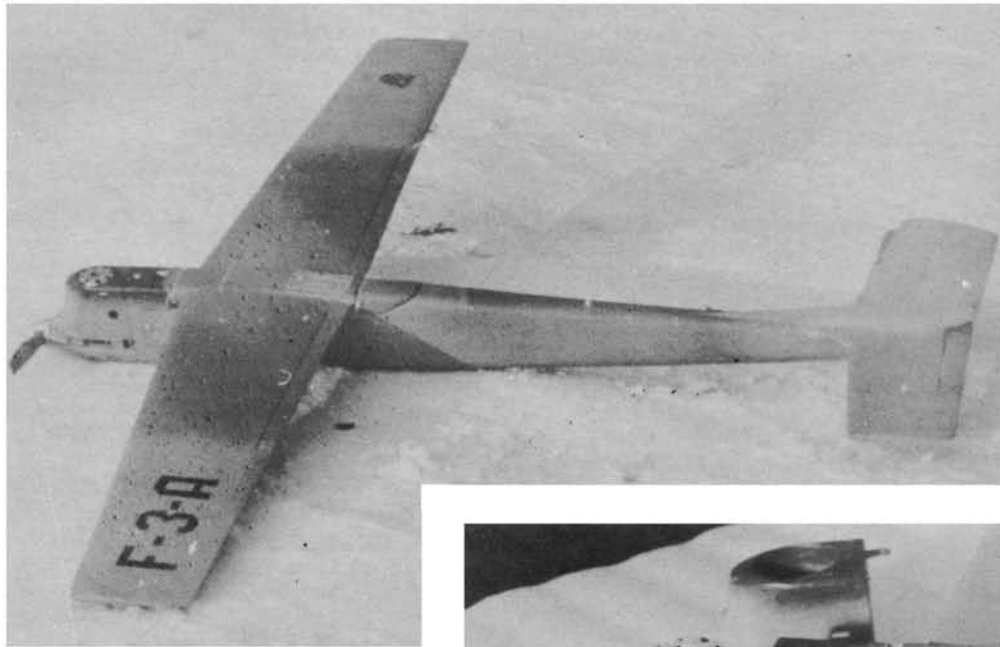
Maybe. Check the accompanying list of current World Records to see if there isn't a category that has special interest and/or has a current record within striking range. Keep in mind, though, that a new record must exceed the existing one by 2% or better.

To break many of the current World Records, of course, will be tough either because of the high achievement by the present holder or because equipment to measure performance isn't readily at hand. But here are some of the record categories in which, in our minds, new records could most easily be set—given a bit of concentrated interest (and luck in some cases).

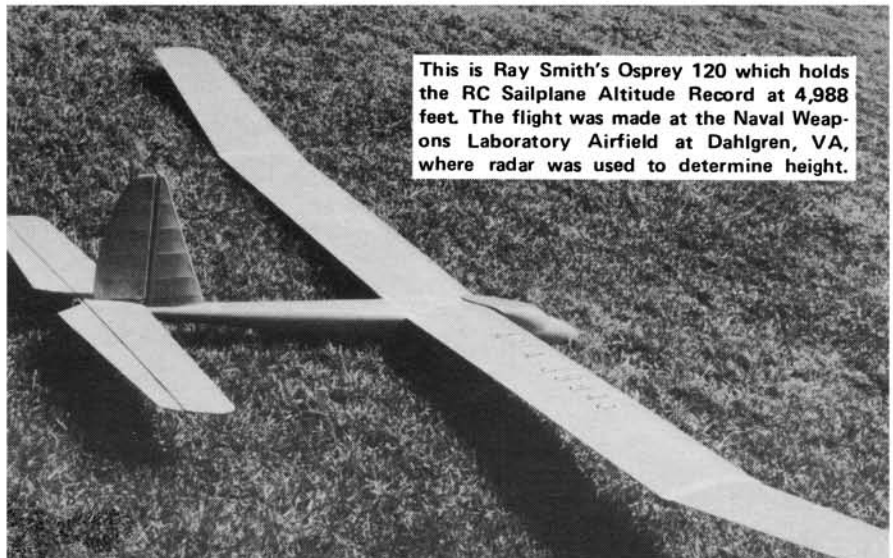
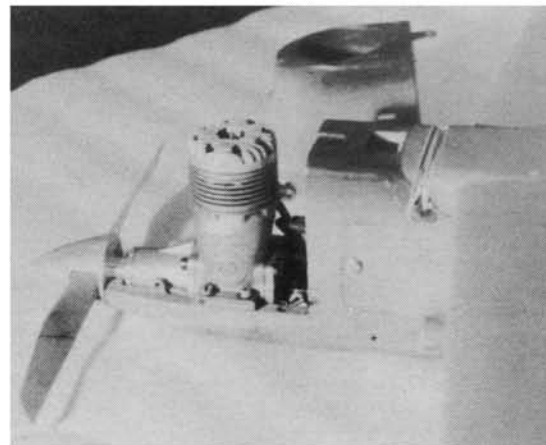
Rubber Power FF Duration. The record now stands at 1 hour 41 minutes and 32 seconds. That's not bad, but some days the wind drift and thermal activity are just right for a model to stay up many hours if not dethermalized. Model could be an AMA Unlimited (or even bigger). FAI model specifications for records won't concern anyone very much, as the closest limit apt to be encountered is the minimum surface area (wing plus stab, projected) loading of 3.95 ozs. per square foot. Models are clocked with ordinary stop watches, and it's even okay for the timers to follow the model.

Rubber Power FF Height. The present record of 5,682 feet is surely beatable. In fact, this record frequently is beaten (by accident and without certification) when a rubber model, Wakefield or Unlimited, goes out of sight overhead, even dethermalized, in a hot thermal. The trick is to find one of those super-thermally days and have the height-measuring means at your disposal.

Piston Power FF Speed. To break this record, presently 107.77 mph, certainly would require a model different from the normal FF contest or sport machine—but a better performance easily is possible. The main design considerations for rules compliance are .61 cu. in. maximum engine and maximum surface loading of 16.38 ozs. per square foot. The timed course length is 50 meters (164½"), and it must be flown in both directions within 30 minutes; the average is considered for record purposes. Main design considerations outside of the FAI specs would be in controlling turn and climb—and in having a model which would survive the landing and be ready for a flight in the opposite direction. Surfaces which are designed to break-away on impact should obviously be considered. Hand-launching is permitted, but AMA Technical Director Frank Ehling thinks that R.O.G. is the way to go. His approach would be to set the surfaces so that the airplane couldn't lift off on the first flight trial, then gradually adjust the surfaces until the plane barely climbs. Keep it close to the ground, is his philosophy. Obvi-



RC Speed in Straight Line Record holder by Goukouné and Myakinine, U.S.S.R., above, seems to be a clean design except for rubber hold-downs plainly visible in front-end shot at right. The first pass was timed at 265 mph, downwind, following a long dive for acceleration. The wind was said to be variable both in force and direction at the time, with gusts up around 16 mph. A short dive was made before entering the course in the opposite direction, for a clogged speed of 162 mph. The average of the two passes was record of 213.7 mph.



This is Ray Smith's Osprey 120 which holds the RC Sailplane Altitude Record at 4,988 feet. The flight was made at the Naval Weapons Laboratory Airfield at Dahlgren, VA, where radar was used to determine height.

WORLD RECORD (Cont.)

ously a timer to limit engine run would be needed as would be a good tracking takeoff gear. And timer-actuated variable tail surfaces, a la present FAI Power models, might be useful.

Free Flight Seaplanes. All of the Rubber Power FF Seaplane records stand unclaimed; any kind of performance would cop a gorgeous FAI World Record Certificate. The same is true for Piston Power FF Seaplanes in the Duration and Speed categories, and from an achievable point of view, capturing the Distance and Height records shouldn't be too difficult. Seaplane models have to take off from water, but they don't have to land on water.

RC Glider Height. Our ego takes great pleasure in snatching a record away from another country, but the current record of 4,988 feet by our own Ray Smith seems like it's right for plucking. Launching of RC Gliders for World Records is by line of 984-ft. maximum length—winch, pulleys or hand towing all permitted. Landing of RC models, including Gliders, must be within 500 meters of the takeoff release point (or within 500 meters of the pre-stated landing point for Straight-Line Distance Records). The pilot must stay on the ground, which is somewhat of a limiting factor in altitude when control must be maintained, but binoculars or other optical aids may be used.

RC Helicopter Distance in Closed Course. If the Straight-Line Distance record is 35.72 miles, surely the 9.33-mile closed course figure can be bettered. (Why these records are shown as tentative is not clear to us, in view of the date of the performance; FAI is being questioned on the matter.) The course for RC models with piston engine, including Helicopters, is a straight line of 500 meters length.

RC Helicopter Speed. Hubert Bitner's recent (October 17) speed of 34.3 mph is being submitted to FAI for certification as a new World Record in this category, but we suspect that concerted effort will better this figure. The timed course is 200 meters which must be traversed in both directions within a half hour and without landing; the average speed is considered for record purposes.

Control Line Speed. The records in the 5cc (.305 cu. in.) and 10cc (.610 cu. in.) classes are already bettered by comparable engine size AMA National Records, but it should be recognized that FAI specifications require a larger model than commonly used for AMA competitions. This is due to FAI's maximum surface loading in this class of 32.76 ozs. per sq. ft. surface area (wing plus stab area). Yet, using the FAI Speed competition model as an example, which has the same maximum loading limitation, the increased wing area has not seemed to slow the models. Monoline and takeoff dollies are permitted for FAI CL Speed records as is any kind of fuel. Furthermore, there are no minimum control wire diameters or pull test to contend with—which points up the need to conduct FAI CL Speed Record Trials in an isolated area completely free of spectators and with super-strong protective barriers for officials. FAI line length (minimum) is 52'2.77" for the 5cc class and 65'3.46" for the 10cc class. Timing is over a minimum distance of one kilometer, respectively 10 and 8 laps for the lengths given. (Longer lines may be used providing one kilometer is made up by a whole number of laps.)

Indoor Category III. In that the AMA Category II HL Stick record exceeds the 33 minutes and 34 seconds FAI World Record in

FAI WORLD RECORDS

Free Flight Landplane

Classification	Held By	Nation	Performance	Date Est.
F1A, 17 Glider, Duration	M. Milutinovic	Yugo.	4h 58m 10s	5-15-60
F1A, 18 Glider, Distance SL	Z. Taus	Czech.	192.8 mi.	3-31-62
F1A, 19 Glider, Height	G. Benedek	Hungary	7755 ft.	5-23-48
F1B, 1 Rubber, Duration	V. Fiodorov	USSR	1h 41m 32s	6-19-64
F1B, 2 Rubber, Distance SL	Tchiglitsev & Tomsk	USSR	230.64 mi.	7-1-62
F1B, 3 Rubber, Height	V. Fiodorov	USSR	5682 ft.	6-19-64
F1B, 4 Rubber, Speed	P. Motekaitis	USSR	90.036 mph	6-20-71
F1C, 5 Piston, Duration	M. Koulakovsky	USSR	6h 1m	8-6-52
F1C, 6 Piston, Distance SL	E. Boricevitch	USSR	235.3 mi.	8-14-52
F1C, 7 Piston, Height	G. Lioubouchkine	USSR	13620 ft.	8-13-47
F1C, 8 Piston, Speed	A. Doubinetsky	USSR	107.77 mph	6-25-73
F1F, 9 HC Rubber, Duration	A. Nazarov	USSR	33m 26.7s	6-3-68
F1F, 10 HC Rubber, Distance SL	G. Pelegi	Italy	17183.4 ft.	8-3-74
F1F, 11 HC Rubber, Height	P. Motekaitis	USSR	2664 ft.	8-30-75
F1F, 12 HC Rubber, Speed	P. Motekaitis	USSR	89.62 mph	6-12-70
F1F, 13 HC Piston, Duration	S. Purice	Romania	3h 12m	10-1-65
F1F, 14 HC Piston, Distance	V. Titlov	USSR	56.85 mi.	10-1-63
F1F, 15 HC Piston, Height	S. Purice	Romania	12,300 ft.	9-24-63
F1F, 16 HC Piston, Speed	A. Pavlov	USSR	72.15 mph	9-20-70

Free Flight Seaplane

Classification	Held By	Nation	Performance	Date Est.
F1B, 40 Rubber, Duration	No Record Established			
F1B, 41 Rubber, Distance SL	No Record Established			
F1B, 42 Rubber, Height	No Record Established			
F1B, 43 Rubber, Speed	No Record Established			
F1C, 44 Piston, Duration	No Record Established			
F1C, 45 Piston, Distance SL	M. Sulc	Czech.	9.75 mi.	10-4-73
F1C, 46 Piston, Height	M. Sulc	Czech.	6430 ft.	10-4-73
F1C, 47 Piston, Speed	No Record Established			

Radio Control

Classification	Held By	Nation	Performance	Date Est.
F3A, 20 Landplane, Duration	L. Giertz	USA	14h 29m 51s	7-5/6-74
F3A, 21 Landplane, Distance SL	R. Weber	USA	266 mi.	8-16-75
F3A, 31 Landplane, Distance CC	R. Weber	USA	424.4 mi.	5-31-76
F3A, 22 Landplane, Height	M. Hill	USA	26919 ft.	9-6-70
F3A, 23 Landplane, Speed	Goukoune/Myakinine	USSR	213.7 mph	9-21-71
F3B, 24 Glider, Duration	V. Miakinine	USSR	25h 44m 8s	9-30/ 10-1-73
F3B, 25 Glider, Distance SL	J. Hiner	USA	31.86 mi.	4-24-75
F3B, 34 Glider, Distance CC	L. Aldochine	USSR	324.35 mi.	10-24-74
F3B, 26 Glider, Height	R. Smith	USA	4988 ft.	9-2-68
F3B, 33 Glider, Speed	W. Sitar	Austria	188.27 mph*	5-29-76
F3C, 35 HC Piston, Duration	H. Paellman	Germany	1h 45m	7-13-74
F3C, 36 HC Piston, Distance SL	D. Ziegler	Germany	35.72 mi.*	7-13-74
F3C, 39 HC Piston, Distance CC	V. Bitterer	Germany	9.33 mi.*	8-12-73
F3C, 37 HC Piston, Height	H. Pallmann	Germany	3471 ft.	7-31-74
F3C, 38 HC Piston, Speed	H. Bitner	USA	34.3 mph*	10-17-76
F3A, 48 Seaplane, Duration	W. Kaiser	W. Ger.	6h 18m 17s	4-15-72
F3A, 49 Seaplane, Distance SL	N. Bowles	USA	135.2 mi.	3-6-76
F3A, 52 Seaplane, Distance CC	B. Petersen	USA	152.86 mi.	9-14-75
F3A, 50 Seaplane, Height	M. Hill	USA	18540 ft.	9-3-67
F3A, 51 Seaplane, Speed	Goukoune/Myakinine	USSR	183.29 mph	9-25-71

Control Line

Classification	Held By	Nation	Performance	Date Est.
F2A, 27 2.5cc, Speed	A. Pereversen	USSR	186.4 mph*	11-2-75
F2A, 28 5cc, Speed	T. McDonald	USA	179.54 mph	11-15-64
F2A, 29 10cc, Speed	A. Kouznetsov	USSR	196 mph	9-30-62
F2A, 30 Jet, Speed	L. Lipinski	USSR	245.83 mph	6-12-71

Indoor

Classification	Held By	Nation	Performance	Date Est.
F1D, 32a Cat. I, up to 26'	T. Vallee	USA	22m 45s	8-22-75
F1D, 32b Cat. II, 26' to 49'	J. Kalina	Czech.	30m 7s	8-26-70
F1D, 32c Cat. III, 49' to 98'	E. Ciapala	Poland	33m 34s	8-19-73
F1D, 32d Cat. IV, over 98'	R. Kowalski	USA	50m 41s*	8-14-76

*Tentative; HC = Helicopter; SL = Straight Line; CC = Closed Course

FAI Category III, there seems to be hope for bringing this record to the U.S. FAI Indoor model record rules don't limit the weight or size of the models (there really is an upper size limit, but that's huge). The present record is at a pretty good figure for a maximum 98' ceiling, we admit, but it's certainly more attainable than the 50:41 figure Dick Kowalski set for FAI Cat. IV last August.

Measuring Record Performance

Duration. Two timekeepers who may use ordinary stop watches are needed, or a recording barograph carried in the model may be used (but we are unaware of any suitable barographs). Other than for seaplanes, models may be either hand-launched or rise off the ground. Models which rise from the ground or water must become airborne in a period not exceeding 2% of the total flight time. The engine of RC models must run for at least 98% of the record time, and all RC models must land within 500 meters of the launch point (unless the Duration record is set in conjunction with a Straight-Line Distance attempt). Timers may follow the model and use binoculars or other means of proving the model remained airborne.

Distance in a Straight Line. Up to 500 kilometers are measured on official maps such as may be obtained from the U.S. Geological Survey and other U.S. agencies. Above 500 km, distance is computed from geographical ordinates of the places of launching and landing. When maps are used, it is helpful to obtain the maps beforehand and plan launching and landing according to references on the map.

Distance in a Closed Course. The base of 500 meters for powered RC models and 100 meters for RC Gliders can be established directly by measuring with a steel tape. Officials are needed at each course end to signal the end's passing, and another official to record the number of course lengths completed.

Speed in a Straight Line. The course may be laid out by direct measurement with a steel tape and triangulation for perpendicular observation/timing points. The course length is 50 meters for FF Rubber Power models and RC Gliders, 100 meters for FF Piston Power models, and 200 meters for RC powered models. A course entry must also be laid out of 100 meters for RC powered models and 25 meters for RC Gliders. Powered RC models must maintain an altitude between 40 meters and 10 meters during both the course entry and the actual timed course, while RC Gliders must not exceed 20 meters altitude during the course entry and the actual timed course; references need to be established so that officials can certify to maintenance of flight within these altitudes. Two timekeepers (or really two sets of timekeepers) must be used, each with timepieces measuring to at least 1/100th second; the difference between the times registered by the two timekeepers must not exceed 1/50th second. A common method of watch usage is to electrically rig a stop watch for actuation with sensitive push-button switches held and operated by timers at each end of the course; other means may also be used. The course must be flown in both directions within one-half hour; FF models may land between passes, but not RC.

Control Line Speed. Essentially the timing is the same as for AMA Speed, but the requirement is for only two timers. Stop watches must measure to at least 1/10th second, and the difference between the watch readings must not exceed 2/10ths second.



Above: Maynard Hill preps his Catbird for flight. Hill holds the RC Altitude Record with this design, and earlier he also held the Duration Record. The plane weighed 7.4 lbs. at takeoff, complete with about 25 ozs. of fuel. The flight was terminated by fuel exhaustion at 26,919 feet. The airborne receiver was mounted in an insulated box and also provided with a heater—turned on at 15,000 feet to keep the 'radio cabin' above +30° throughout.

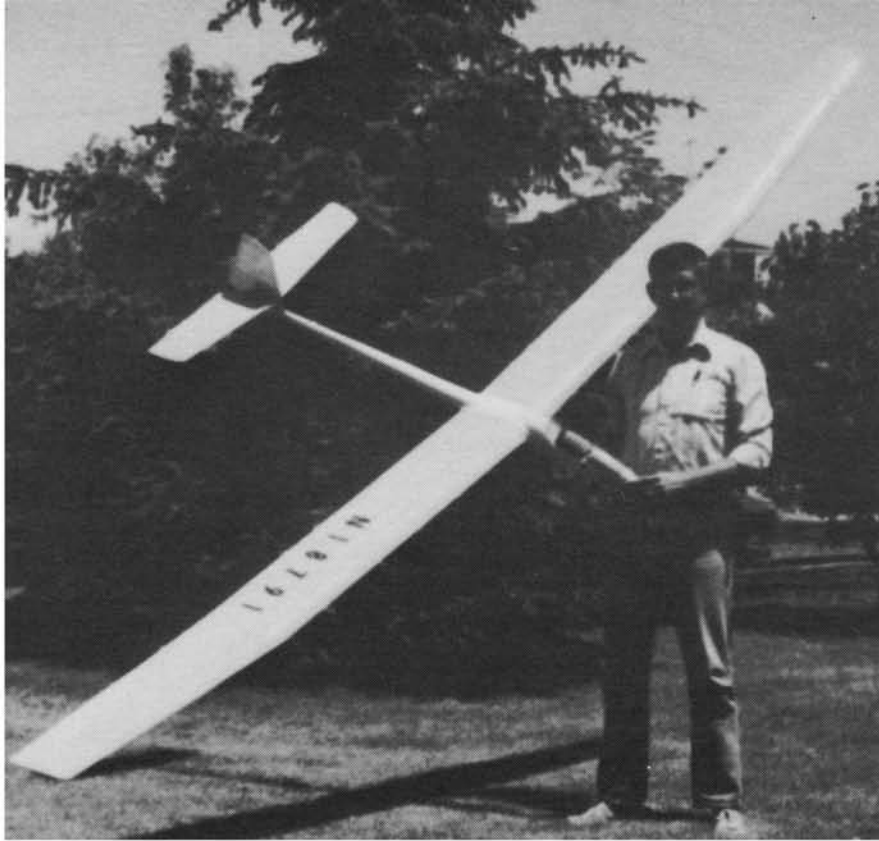
Right: Optical tracker for Hill's altitude flight, electrically driven. In this photo Walt Good (lower) is the tracker operator while Maynard Hill (above) operates the transmitter. For the 26,919-ft. record, Bill Watson was the tracker operator.



Below: Bryce Petersen's Seaplane Closed Course Distance Record holder. Has HP 40 with Perry Pump—carried 72 ozs. of fuel and burned all but 4 ozs. in 152.86-mile flight.



Lars Giertz poses with his Skyhook VIII which flew for 14 hours, 29 minutes and 51 seconds for a new RC Duration Record. Power came from a modified Webra Mach II Diesel engine. Interestingly, the model was launched just after 9 pm, and it landed about 11:30 the next morning, when extreme thermal activity necessitated engine shut-down. The model was kept in sight at night by using a high-powered professional motion picture arc light and light-reflecting tape on the model.



Jack Hiner shows off RC Sailplane which established Straight Line Distance Record of 31.86 miles in 1975. Flight took just over two hours, and landing was 135 meters from spot picked.

WORLD RECORD (Cont.)

Altitude (Height). Of all the types of aeromodelling records, height above the starting point is the one most likely to present a problem for approved measurement. Choice must be from among the several means specified in the FAI Sporting Code: a small barograph carried in the model; theodolites or telemeters; a barograph carried in a full-size aircraft which follows the model but never exceeds the maximum height of the model. We aren't aware of any suitable, commercially available, small barographs for carrying in the model, but the March 1967 *Flying Models* carried an article by Maynard Hill on how to build a small barograph of about 6 oz. weight. Most of the theodolites and telemeters are situated on government testing ranges; however, cooperation for use of such equipment has been obtained in the past. Barographs for carrying in an accompanying full-size airplane may be rented from contacts provided by AMA's parent body, the National Aeronautic Association. In using barographs, it is also necessary to calibrate the instruments to determine height reached.

The 26,919-ft. height record by Maynard Hill, by the way, was determined by radar at the Naval Weapons Laboratory Airfield, Dahlgren, VA. Hill maintained visibility for controlling the model by means of a 30-power telescope.

Basic Model Requirements

- Maximum weight with fuel, 11.023 lbs.
- Maximum engine size, .61 cu. in.
- Maximum surface area, 2,325 sq. ins.
- Maximum surface loading (with fuel):
 - FF, 16.38 ozs. per sq. ft.
 - RC, 24.57 ozs. per sq. ft.
 - CL, 32.76 ozs. per sq. ft.
- Minimum surface loading (all classes),

3.95 ozs. per sq. ft.
(Projected wing area and projected stabilizer area are added together to determine surface area for loading and maximum size purposes.)

The FAI Sporting Code (rule book) is available from AMA HQ for \$2.50.

FAI Record Sanction Procedures

Sanction fees payable in advance to AMA HQ are set lower than actual costs in order to encourage as many as possible to try. Procedures are different for clubs and individuals, as follows:

Club or Regional Trials. The sanction fee is \$10.00, good for all FAI record categories, and any number of records can be established under the single sanction. The sanction is effective for a requested three-day period, and is available only to AMA chartered clubs. Those trying for a record must have a current AMA license with \$1 FAI stamp, or pay fees for same to CD prior to flight. Application is made by a current AMA Contest Director to AMA HQ using a letter of request or the regular Application for Meet Sanction. The CD will be mailed the sanction certificate and a copy of the records section of the FAI Sporting Code (rule book).

Individual Trials. The sanction fee is \$1.00, and sanction is obtained by sending the fee and letter of request, stating the category of record to be attempted, to AMA HQ. Such sanction will be granted only to current AMA members who have the \$1 FAI stamp; it is good for as many attempts as desired during the calendar year of issuance, but for one category only—non-transferable. Individual attempts must be witnessed by a current AMA Contest Director and other officials as required according to particular categories. Since individual sanctions do not specify dates or sites, the individual or CD concerned must notify AMA HQ by mail or telephone prior to each

attempt, giving the time and site of the planned attempt; if mail is used, postmark must be at least five days prior to the attempt; if by phone, notice must be given at least 48 hours in advance.

To Claim a Record (Meet or Individual). The record claim must be made to AMA HQ as soon as possible. If the flight is made on a weekend, HQ must be notified by phone on the following Monday morning. (AMA HQ is required to notify FAI of a record claim within 48 hours of the attempt.) Each record claimed must be accompanied by a \$20 record processing fee; the fee will be refunded if for any reason the record is not accepted by FAI. Finally, a documented report of the record performance, signed by the CD, must be submitted to AMA within 30 days of notice from AMA HQ.

Who's Presently Trying?

When this was written in mid-November, there were 32 outstanding individual sanctions for FAI World Record attempts. These will all expire December 31, 1976, but no doubt many will be renewed for continuing efforts in 1977. A listing of those holding sanctions provides an interesting picture.

FF Rubber Speed (No. 4). Issued to Tom Vallee. Speed needed: 91.84 mph.

RC Landplane Duration (No. 20). Separately issued to Gerry Harkins and Richard Weber. Duration needed: 14 hours, 47 minutes, 15 seconds.

RC Landplane Distance Straight Line (No. 21). Separately issued to Gerry Harkins and Jack Hiner. Distance needed: 271.32 miles.

RC Glider Duration (No. 24). Issued to Christopher Adams. Duration needed: 26 hours, 15 minutes, 1 second.

RC Glider Distance Straight Line (No. 25). Separately issued to Christopher Adams, Jack Hiner, McIntyre-Hiner team, Richard Schilling, David Smith and Larry Vincek. Distance needed: 32.5 miles.

RC Glider Height (No. 26). Separately issued to Christopher Adams, Jack Hiner, McIntyre-Hiner team, Richard Schilling, David Smith and Larry Vincek. Height needed: 5,088 feet.

RC Glider Speed (No. 33). Separately issued to David Katagiri and Ken Stuhr. Speed needed (assuming acceptance of present tentative record): 192.04 mph.

RC Seaplane Duration (No. 48). Issued to Bryce Petersen. Duration needed: 6 hours, 25 minutes, 51 seconds.

RC Seaplane Distance Straight Line (No. 49). Issued to Bryce Petersen. Distance needed: 137.9 miles.

RC Seaplane Distance Closed Course (No. 52). Issued to Bryce Petersen. Distance needed: 155.92 miles.

CL Speed 5cc Class (No. 28). Issued to Glenn Lee. Speed needed: 183.13 mph.

Indoor Duration Cat. I (No. 32a). Issued to Tom Vallee. Duration needed: 23 minutes, 13 seconds.

Indoor Duration Cat. II (No. 32b). Issued to Tom Vallee. Duration needed: 30 minutes, 44 seconds.

Indoor Duration Cat. III (No. 32c). Separately issued to James Richmond and Tom Vallee. Duration needed: 34 minutes, 15 seconds.

Indoor Duration Cat. IV (No. 32d). Separately issued to Ray Harlan, James Richmond, Al Rohrbach and Tom Vallee. Duration needed: 51 minutes, 42 seconds.

Want to join in?