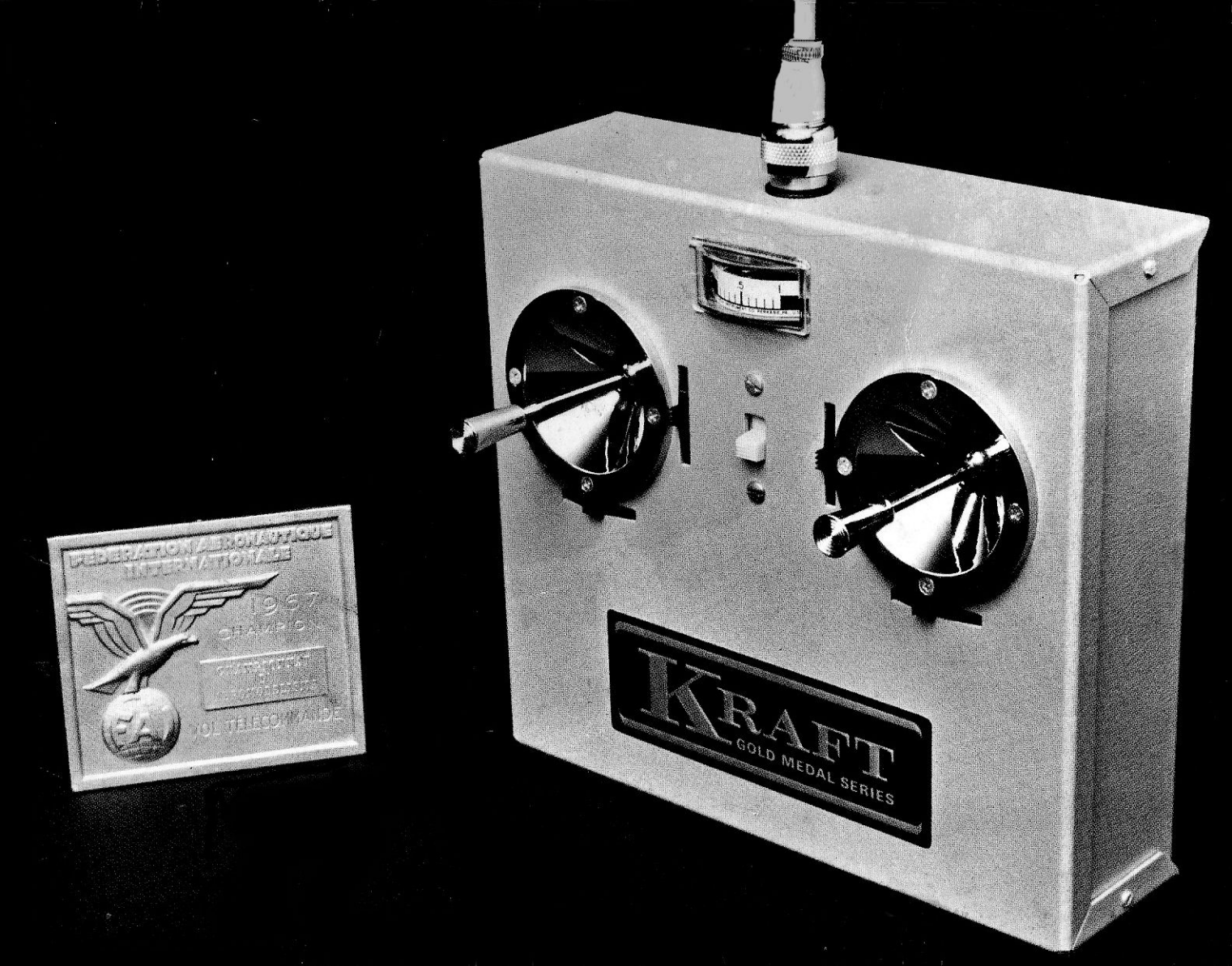

FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE
1967
CHAMPION
VOL TÉLÉCOMMANDÉ
KRAFT
GOLD MEDAL SERIES

INTRODUCTION

From a modest beginning in 1963, Kraft Systems, Inc., has grown until it is now the largest manufacturer in the industry. Such growth in any field is never accidental. It is based on production of competitively priced, quality equipment, designed to the highest current technical level and backed by fast efficient service.

Your purchase of a Kraft product is protected by the sound business management, integrity, and financial stability of the company behind it. Radio control manufacturers may come and go, but we will be here tomorrow to service the product we sell today.

THE RECORD

In 1965, Kraft equipment won more major contests than any other make. In 1966, almost every major contest was won with Kraft equipment, including the top three places at the United States National Championships. In 1967, Kraft equipment topped even past performance, with victory in the World Championship, and a repeat win at the United States National Championships. In fact, so dominant was Kraft equipment in the winners' circle that it swept 8 out of the top 10 places at the United States Nationals.

This outstanding record could only have been achieved with a system of absolute accuracy and unfailing dependability. Most Kraft proportional owners fly purely for pleasure, but they have the assurance that their enjoyment and progress is not limited by the performance of their radio control system.

THE PLANT

Over 70 employees are engaged solely in the production of radio control systems for hobby and sport use. Our attractive plant houses the latest types of electronic production equipment, including new dual wave automated soldering machinery for improved quality control. In 1967, a subsidiary corporation, KRAFT-HAYES PRODUCTS, INC., was formed to produce precision plastic components. These are molded on the latest type of reciprocating screw automatic injection molding equipment from dies produced in our modern machine shop.

To keep pace with the ever increasing demand for our products, Kraft Systems will greatly expand production facilities with the construction of a new 15,000 square foot plant scheduled for completion in August, 1968.

PERSONNEL

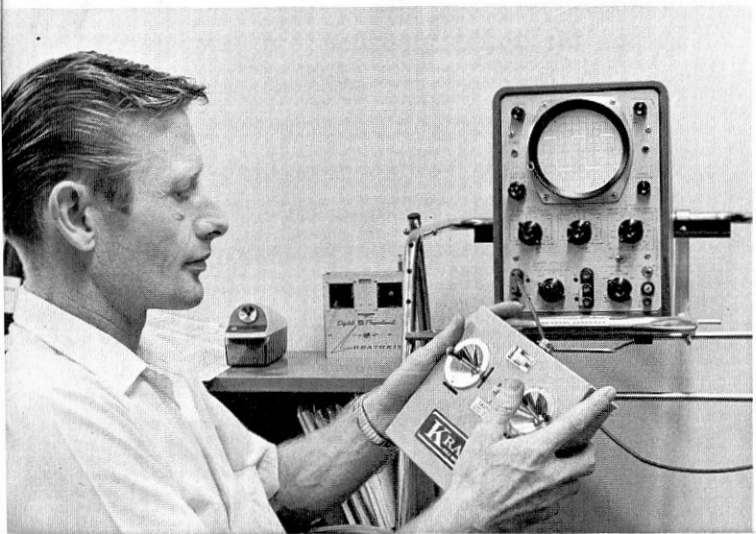
Production of quality proportional radio control equipment is a highly specialized business. A personalized interest in each set produced and service after sale is paramount to success.

Kraft Systems has more individuals of unusual talents in this field than all competition combined. Almost all of our technicians are avid radio control flyers. Phil Kraft, president, is the current World and National Champion, former National Goodyear Racing Champion, and past president of the Radio Control Industry Association. Cliff Weirick, our executive vice president won the U.S. National Championship twice, was a two time member of the U.S. World Championship F.A.I. team, a former National Goodyear Racing Champion, and is the current president of the A.M.A. Chief Engineer Jerry Pullen is a well known contest flyer and winner of many major events. Mr. Pullen designed and flew the first successful feedback proportional system, and is responsible for many of the technical innovations which make possible today's highly reliable proportional systems. The experience of this team is your assurance of the finest possible product.

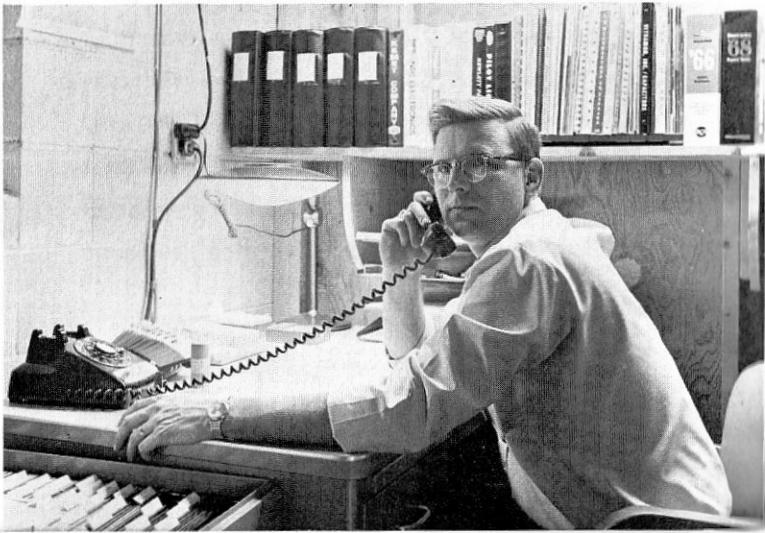
PHIL KRAFT, president

CLIFF WEIRICK, executive vice president

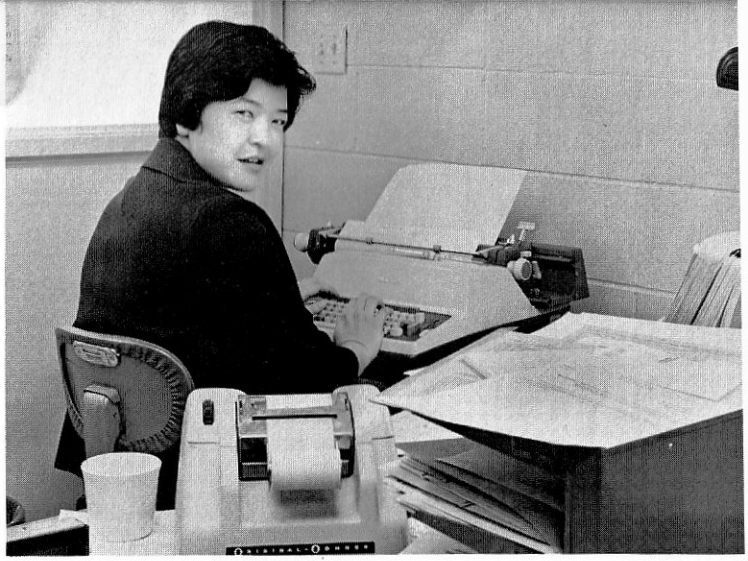
JERRY PULLEN, chief engineer



PHIL HATCH, purchasing and production control



MRS. KRAFT, SR., controller

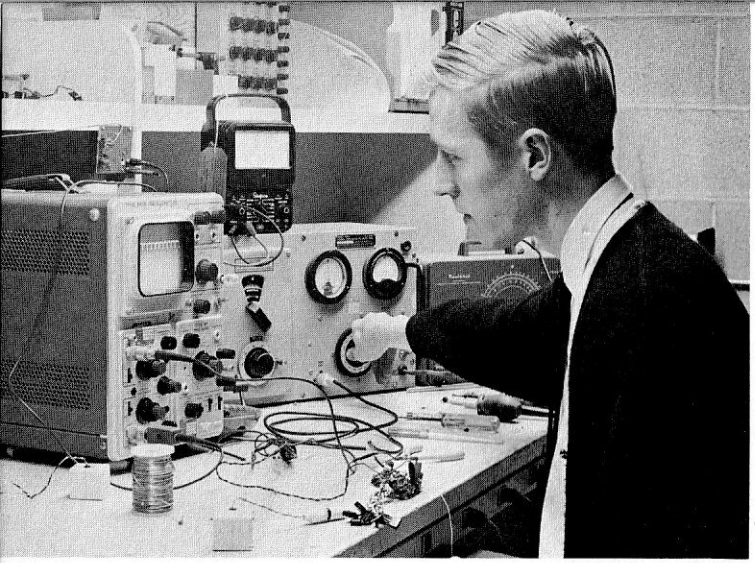


JANE

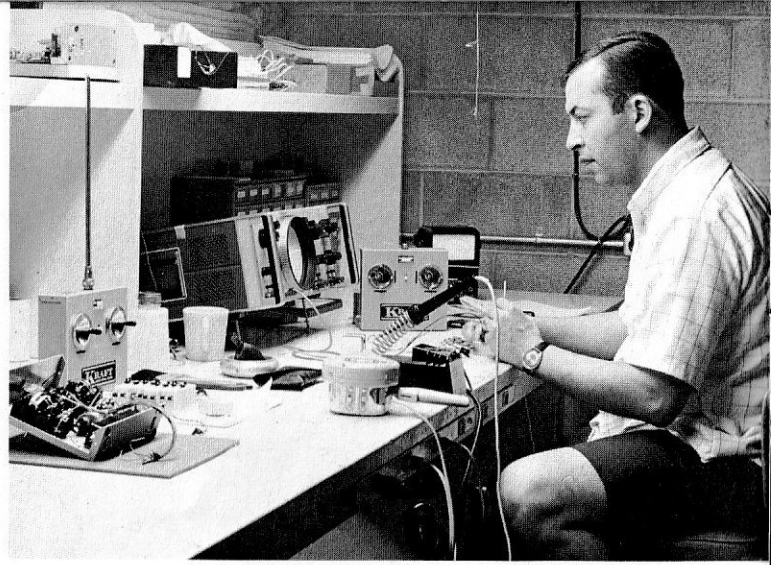
Office Staff

ARLENE

JENNY



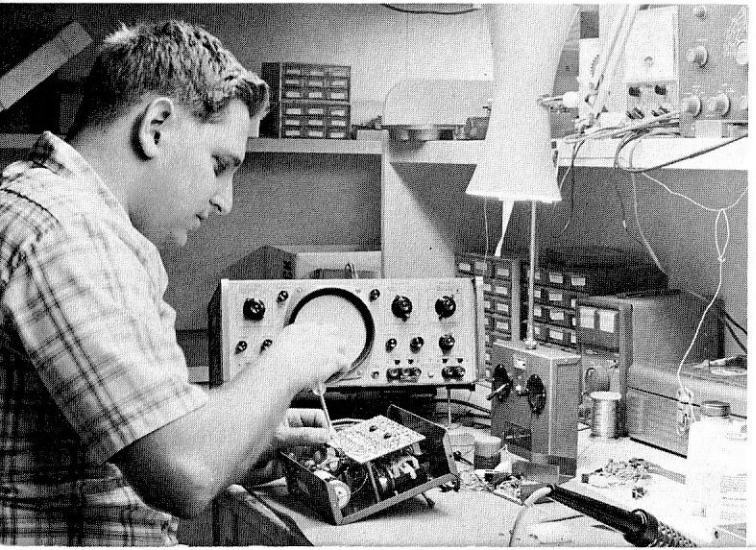
MIKE



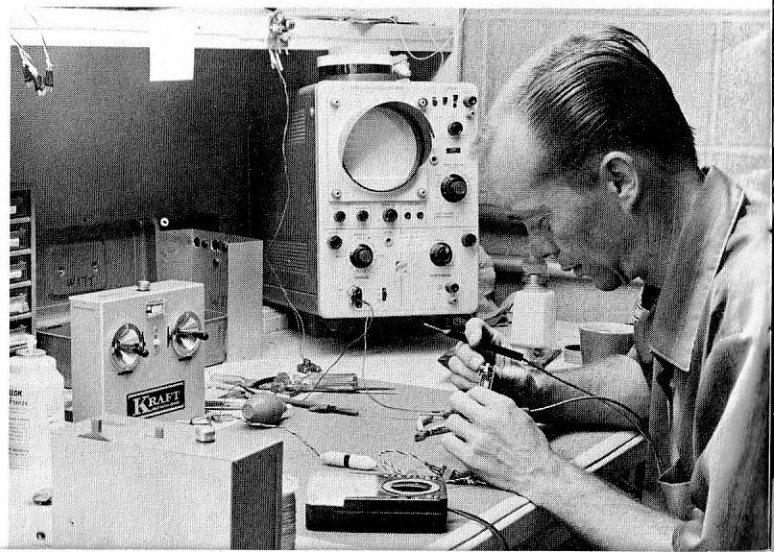
RUDY

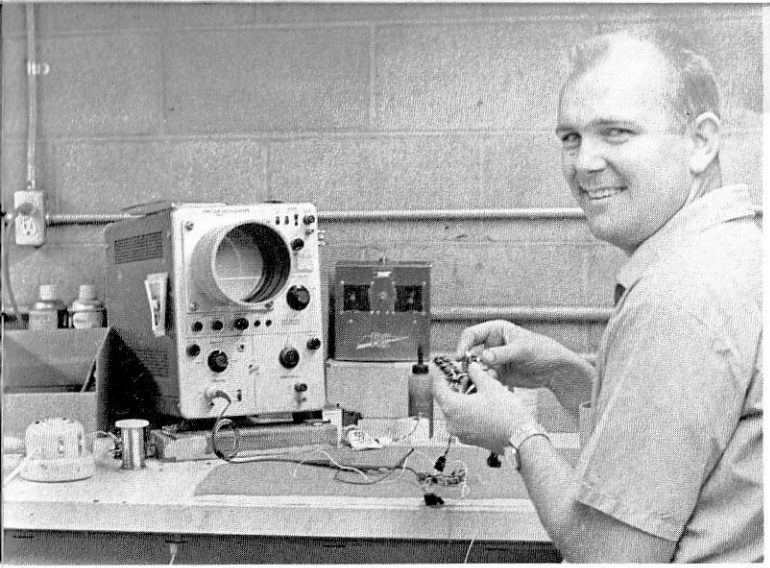
SOME OF
OUR TECHNICIANS

FRED



JIMMY

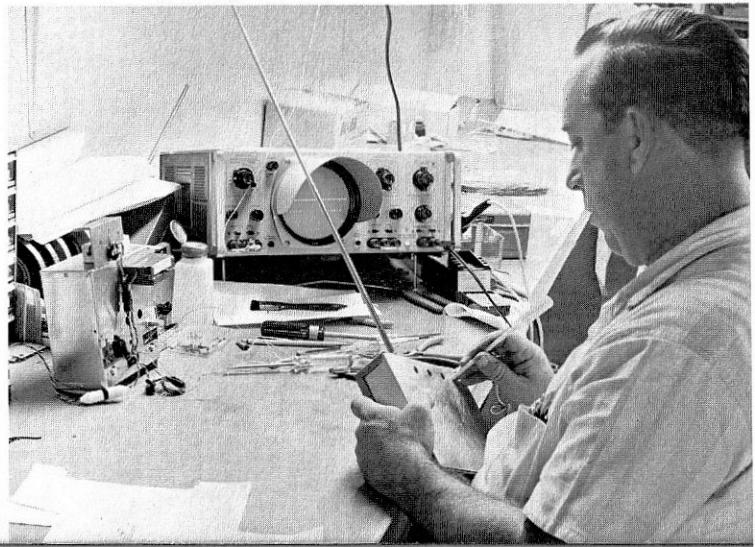




GEORGE

ALLEN

MAURICE



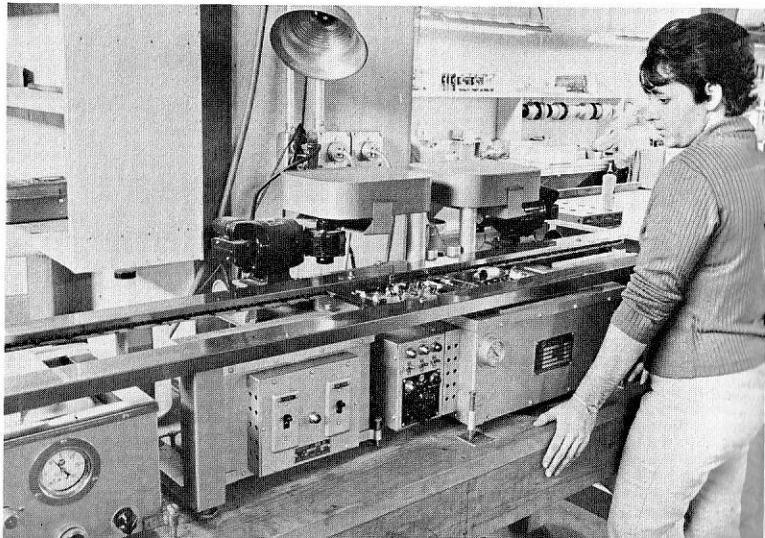
ROY

PART OF PRODUCTION AREA

TRANSMITTER ASSEMBLY

SERVO DEPARTMENT

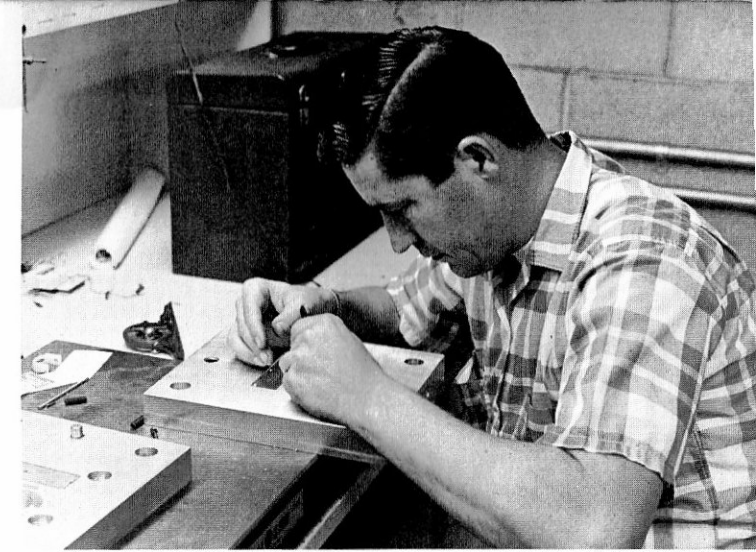
WAVE SOLDERING



KRAFT-HAYES PRODUCTS, INC.

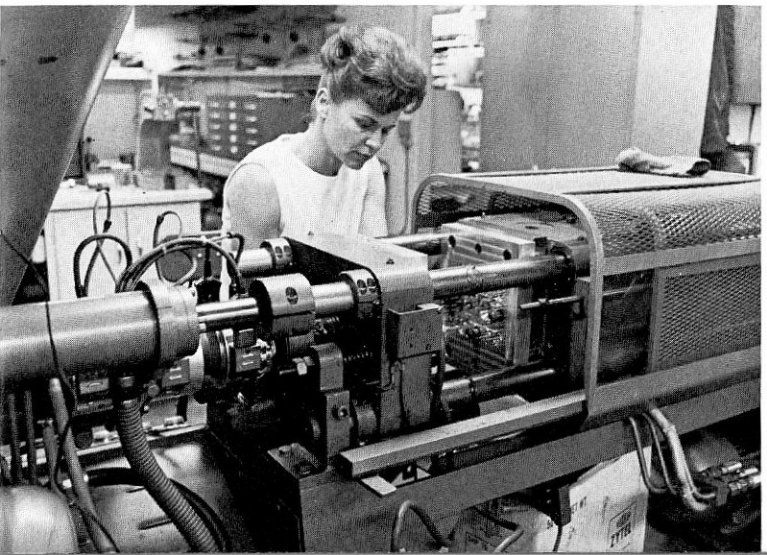
Chuck Hayes, vice president, is recognized in the industry as a master in the design and tooling of high precision plastic and metal components. His talents have been utilized to develop for Kraft Systems, Inc. the finest possible mechanical components. Mr. Hayes personally supervises every phase of tool and die work and injection molding.

In the near future, Kraft-Hayes Products, Inc. will announce several new proprietary products specifically designed for the radio control field.



CHUCK HAYES

INJECTION MOLDING



MACHINE SHOP AREA

GOLD MEDAL SERIES

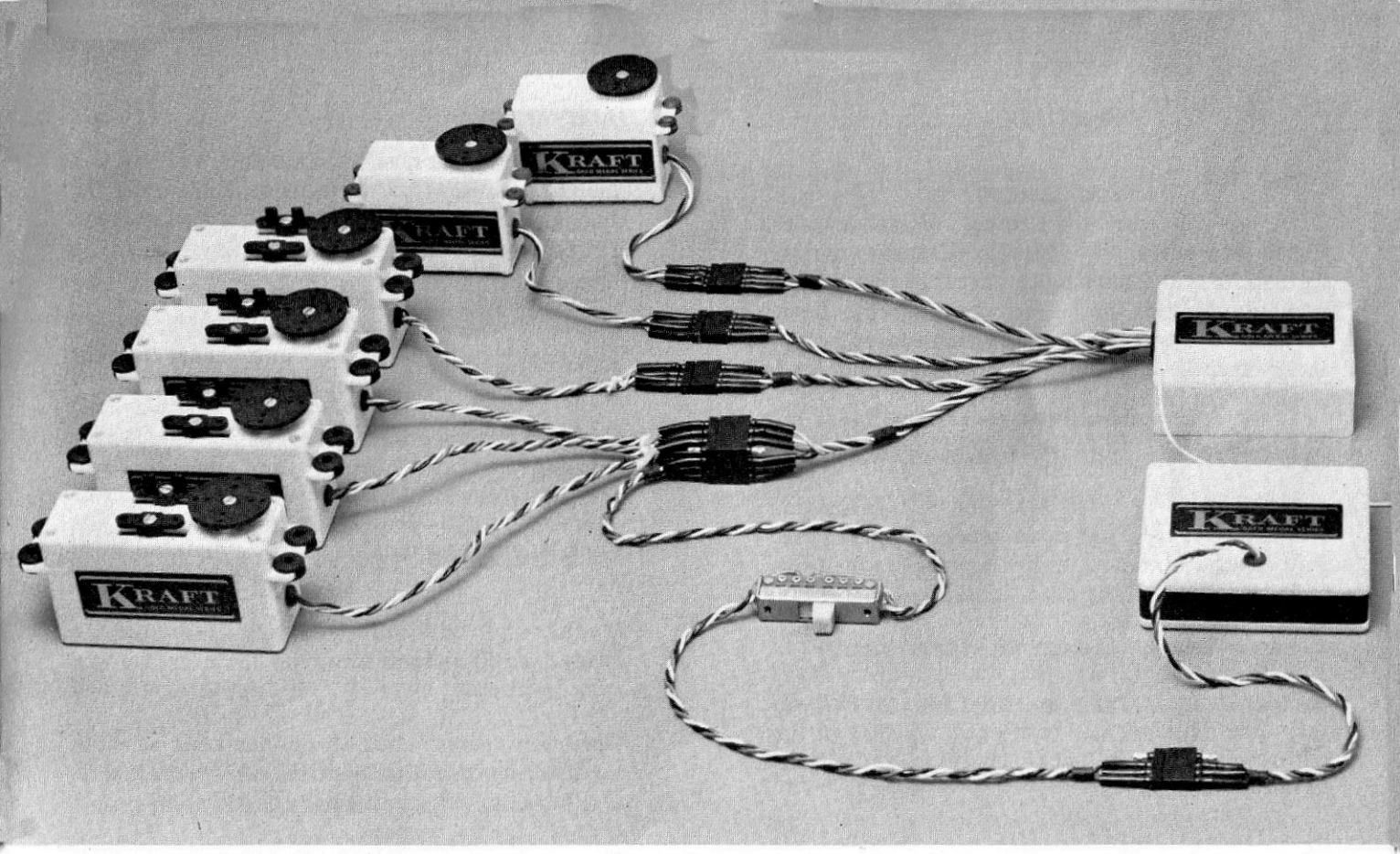
Carefully planned and meticulously executed, the new Gold Medal line represents our proudest achievement.

The new thin line transmitters combine perfect balance with minimum thickness. The hands fit comfortably and naturally over the new enclosed control sticks. The smoothness, accuracy, and softness of control feel must be experienced to be appreciated.

New subminiature receivers offer electronic and performance improvements over the already excellent standard inherent in previous models. Space saving and lighter weight battery packs combine the same high electrical capacity as before with greater installation convenience. Two new miniature lightweight servos complement each other to suit the most difficult requirement in any application. The KPS-9 servos offer the ultimate in application flexibility combined with the revolutionary capacitive feedback system (Patent applied for) which eliminates wear and maintenance problems. The KPS-10 is a micro-miniature servo of extremely light weight, yet it provides the same powerful thrust and full $\frac{5}{8}$" throw of the KPS-9. Both servos are interchangeable and may be ordered in complete sets or in combinations.

A unitized plug wiring harness system has been incorporated in the receiver-servo system for added reliability and lighter weight.

Considering the past performance record; our reputation for service, stability, and integrity; and the features of the new Gold Medal Series; we believe there is almost no other choice in radio control equipment.



Complete 6 channel airborne system including KPR-6B receiver, KB-4B battery pack, switch harness, 4 KPS-9 servos, and 2 KPS-10 servos.

FEATURES

THE SYSTEM

These are the smallest, lightest, digital proportional sets currently available. Extreme miniaturization and lightweight have been obtained without sacrifice in performance. Servos have very high thrust and full throw, and consequently the system is suitable for both heavy duty and miniature applications.

System current drain is the lowest in the field.

4 and 6 channel sets are available with either the KPS-9 or KPS-10 servos in sets or assortments. Any of the standard radio control frequencies may be specified at no additional cost.

4 channel sets may be converted to 6 channel.

Systems come completely wired for installation, including four servos, rechargeable transmitter and receiver battery packs, chargers, and switch harness.

TRANSMITTER

The perfectly balanced thinline design allows the hands to position comfortably and naturally on the controls.

The case is formed from handsome, long wearing, vinyl covered aluminum.

The heavy duty collapsible antenna is quickly removable for ease of transportation.

Enclosed control sticks of completely new design feature smoothness, accuracy, and softness of feel previously unavailable.

Stick length is adjustable to suit individual hand size.

Mechanical trim controls are conveniently located, easily operated, and do not affect control stick position.

Optimum control stick throw has been selected for precise control without excessive sensitivity. If desirable, stick mode can be quickly and simply changed by the owner.

The battery charger for both receiver and transmitter power packs is built into the transmitter. An indicator light is provided to monitor charge operation.

RECEIVER

A modular design concept has been employed to facilitate service and to minimize repair cost. The case is molded of rugged nylon for greater protection.

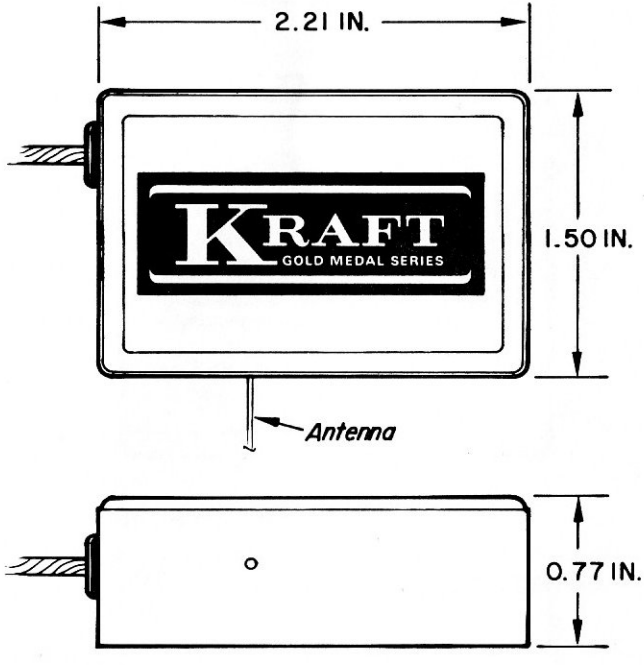
Unitized plug wiring eliminates bulky wiring harnesses, and saves weight and space.

Electronically, the receiver employs a high "Q" R.F. preselector circuit to attenuate spurious responses. Special circuitry provides very high protection against interfering signals and noise.

BATTERY

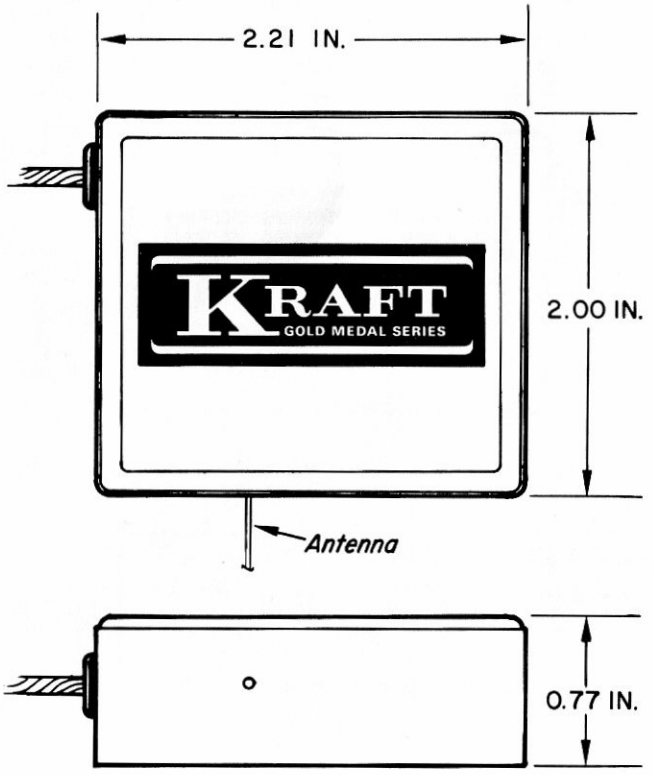
Four 1.2v 500 MAH General Electric cylindrical cells are mounted in a sealed nylon case. Space saving flat pack design permits easy installation. Where weight must be kept to a minimum, a 225 MAH pack with special charger will be available in March, 1968, as an accessory.

ACTUAL SIZE



KPR-4B RECEIVER

ACTUAL SIZE



KPR-6B RECEIVER

SPECIFICATIONS

Complete airborne system weights with four KPS-9 servos and KB-4B Battery Pack:

KP-4B ..... 16.25 ounces
KP-6B ..... 16.75 ounces

As above with four KPS-10 servos:

KP-4B ..... 13.5 ounces
KP-6B ..... 14 ounces

As above with KB-4C Battery Pack:

KP-4B ..... 12 ounces
KP-6B ..... 12.5 ounces

(Note: Because Kraft proportional systems have one-half the current drain of competitive makes, the 225 MAH KB-4C pack is entirely practical.)

Transmitter

RF Input power .....700 mw
RF Output power.....350 mw
Approximate current drain.....100 ma
Temperature range .....0 - 150° F

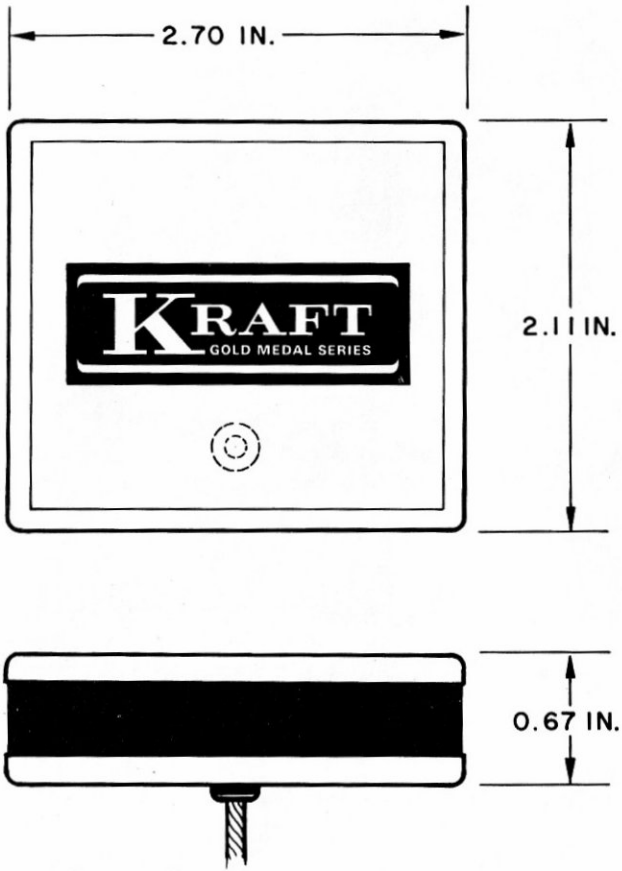
Modulation: Pulse position type. 1.5 ms pulse spacing at control neutral. Pulse time stability is ±1% 0 - 140° F and over useful operating voltage of power pack.

9.6v 500 MAH General Electric rechargeable Nickel-Cadmium battery pack.

Size: 7-1/16" x 6½" x 2"

Weight: 2 pounds, 3 ounces

ACTUAL SIZE



KB-4B BATTERY PACK

Receiver

Sensitivity: 1.5 microvolts for .5v detected.

Spurious signal rejection: −60 DB

Selectivity: −3 DB at 3 KC

Temperature range: 0 - 150° F

Size:

KPR-4B.....77″ x 1.5″ x 2.2″

KPR-6B.....77″ x 2″ x 2.2″

Weight:

KPR-4B ..... 2 ounces

KPR-6B .....2.25 ounces

Receiver Battery Pack

KB-4B Four General Electric 500 MAH Nickel-Cadmium rechargeable batteries housed in a thin, sealed nylon case.

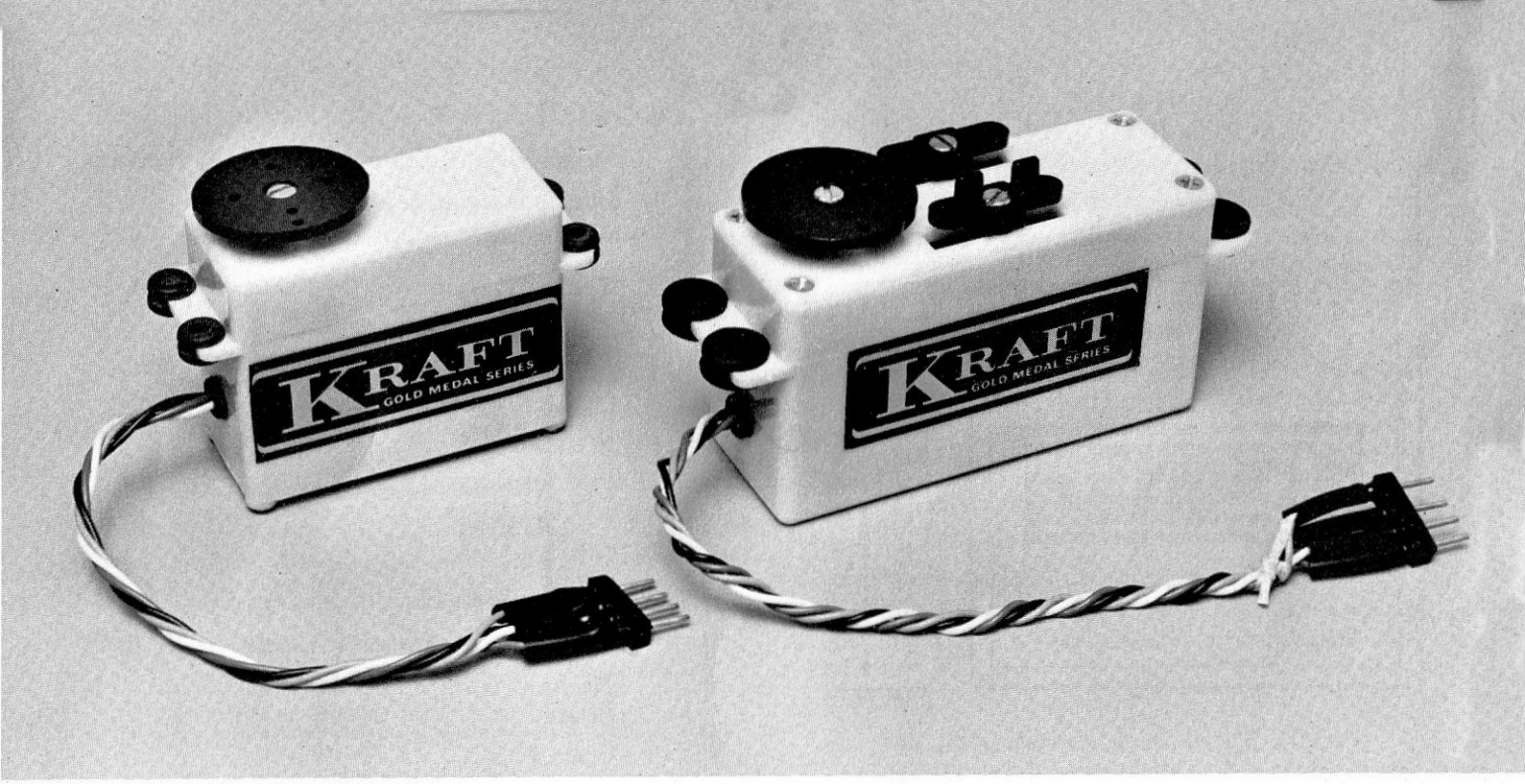
Size: .67 ″ 2.1″ x 2.7″

Weight: 4 ounces

KB-4C Four 225 MAH button type Nickel-Cadmium rechargeable batteries housed in cylindrical sealed nylon case.

Size: 1.10″ dia. x 1.60″ long

Weight: 2.5 ounces



KPS-10 **PICTURED ACTUAL SIZE** KPS-9

Pictured above are the two servos optionally available with the Gold Medal Series. Each has its particular advantage and they complement each other allowing the purchaser the greatest possible flexibility and convenience in adapting them to his application.

KPS-9

Electronically, a miniature variable capacitor replaces the potentiometer normally used to control servo position. Vibration, dirt, wear, and maintenance problems are eliminated. Unlike the inductive method used in some systems to replace the feedback potentiometer, the capacitor does not require complex circuitry, provides uniformly tight servo dead band, and the circuitry is free from drift due to changes in voltage or temperature. This feedback servo will completely eliminate what has been a major cause of trouble in previous proportional servo designs. Consequently, each servo is guaranteed 5 years against wear or any other failure due to the capacitor feedback element.

The mechanical design is as outstanding as is the electronic design. Application flexibility is virtually unlimited. Over 20 different mechanical output combinations are available. It is actually possible to drive eight independent controls simultaneously from one servo. No longer is it necessary to be concerned with direction of servo travel during installation. The precision gear train is exceptionally rugged and features a total mechanical backlash of less than .002″ for precise response. Besides all these features, the servo is very compact, lightweight, and powerful.

KPS-10

This is the smallest, lightest digital proportional servo available. However, nothing has been sacrificed in performance. It is extremely powerful, features full servo throw, and is unexcelled in resolution, response, and accuracy. It is completely suited to both miniature and heavy duty applications.

A specially designed sealed hard ceramic feedback potentiometer provides long trouble free service and eliminates catastrophic failures.

This servo is optionally available with 150° throw for special applications, such as retractable landing gears.

SPECIFICATIONS

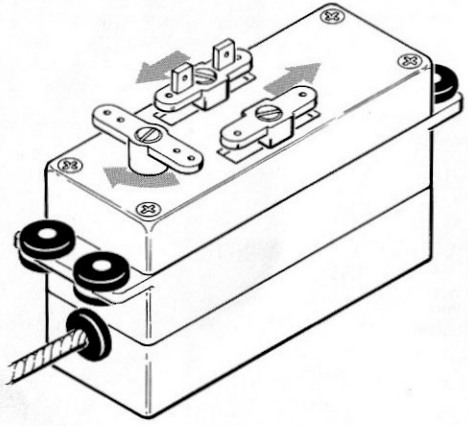
KPS-9

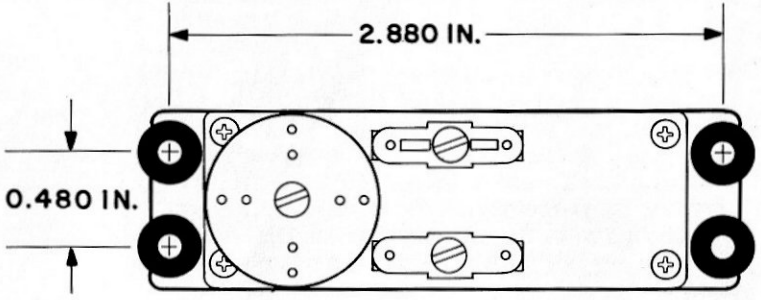
Weight: 2.5 ounces
Static thrust: over 3.25 lbs. with low drain 6 ohm motor.
Transit time: .6 seconds for .625″ travel.
Vibration resistance: tested at over 30 G's, 0 - 20,000 c.p.m. for one hour.
Positioning accuracy: ± .5%
Temperature drift: ± 2%, 0° F to + 160° F
Total gear train backlash: less than .002″
Available outputs: 1 rotary wheel
1 rotary arm
2 linear racks

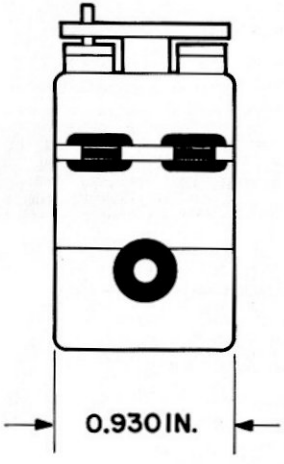
KPS-10

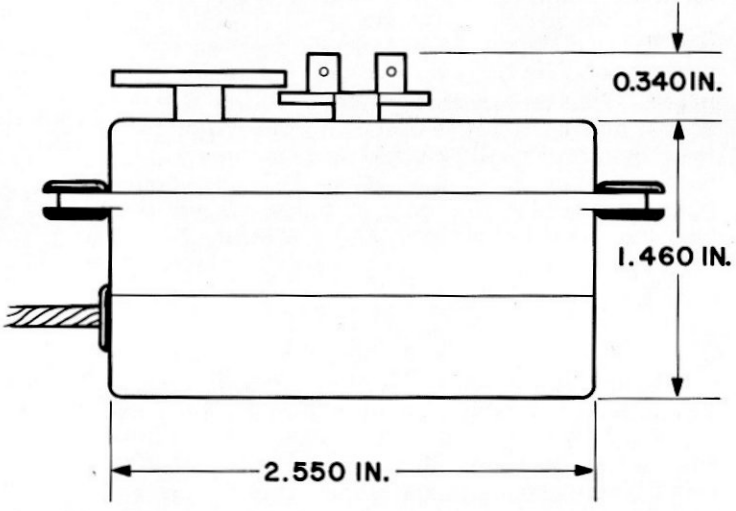
Weight: 1.8 ounces
Static thrust: over 3.5 lbs. with low drain 6 ohm motor.
Transit time: .8 seconds for .625″ travel
Positioning accuracy: ± .5%
Temperature drift: ± 2%, 0° F to + 160° F
Note: Both the KPS-9 and KPS-10 are interchangeable with the earlier model KPS-7, except for the plug. They may be ordered with the same plug as the KPS-7 for use with earlier model receivers.

ACTUAL SIZE KPS-9

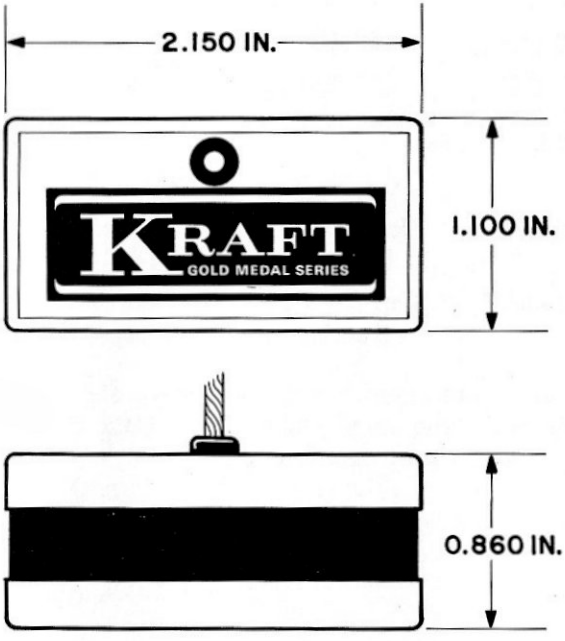








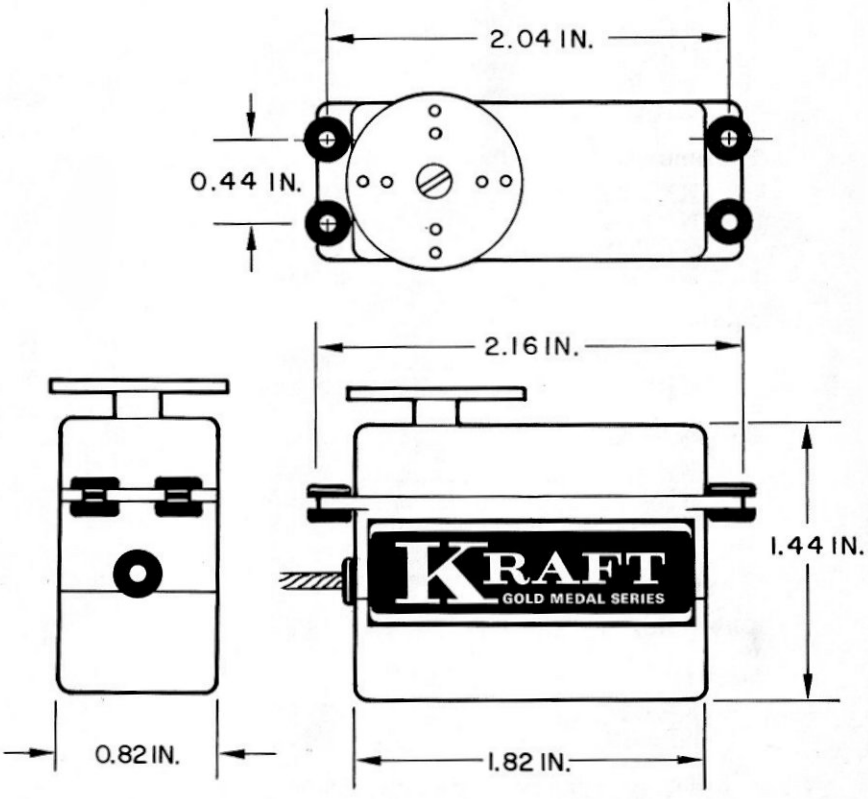
ACTUAL SIZE



KB-4C 225 MAH BATTERY PACK

ACTUAL SIZE

KPS-10



PRICE LIST

Systems include transmitter, receiver, four KPS-9 or KPS-10 servos, transmitter and receiver battery packs, charger, switch harness, and charging cables.

Systems

KP-4B	$399.95
KP-6B	449.95
KP-4S	449.95
KP-6S	499.95

Transmitters

KPT-4B	149.95
KPT-6B	179.95
KPT-4S	199.95
KPT-6S	229.95

Receivers

KPR-4B	89.95
KPR-6B	109.95

Battery Packs

KB-4B	16.95
KB-4C	16.95
Charger for KB-4C (Includes jumper plug to permit charging transmitter separately.)	8.95

Switch Harness 4.95

Servos

KPS-9	39.95
KPS-10	39.95

When ordering, specify frequency, transmitter stick mode, type of system, and type or types of servos desired.

Frequencies Available in mHz

26.995	53.100	72.080
27.045	53.200	72.240
27.095	53.300	72.400
27.145	53.400	72.960
27.195	53.500	75.640

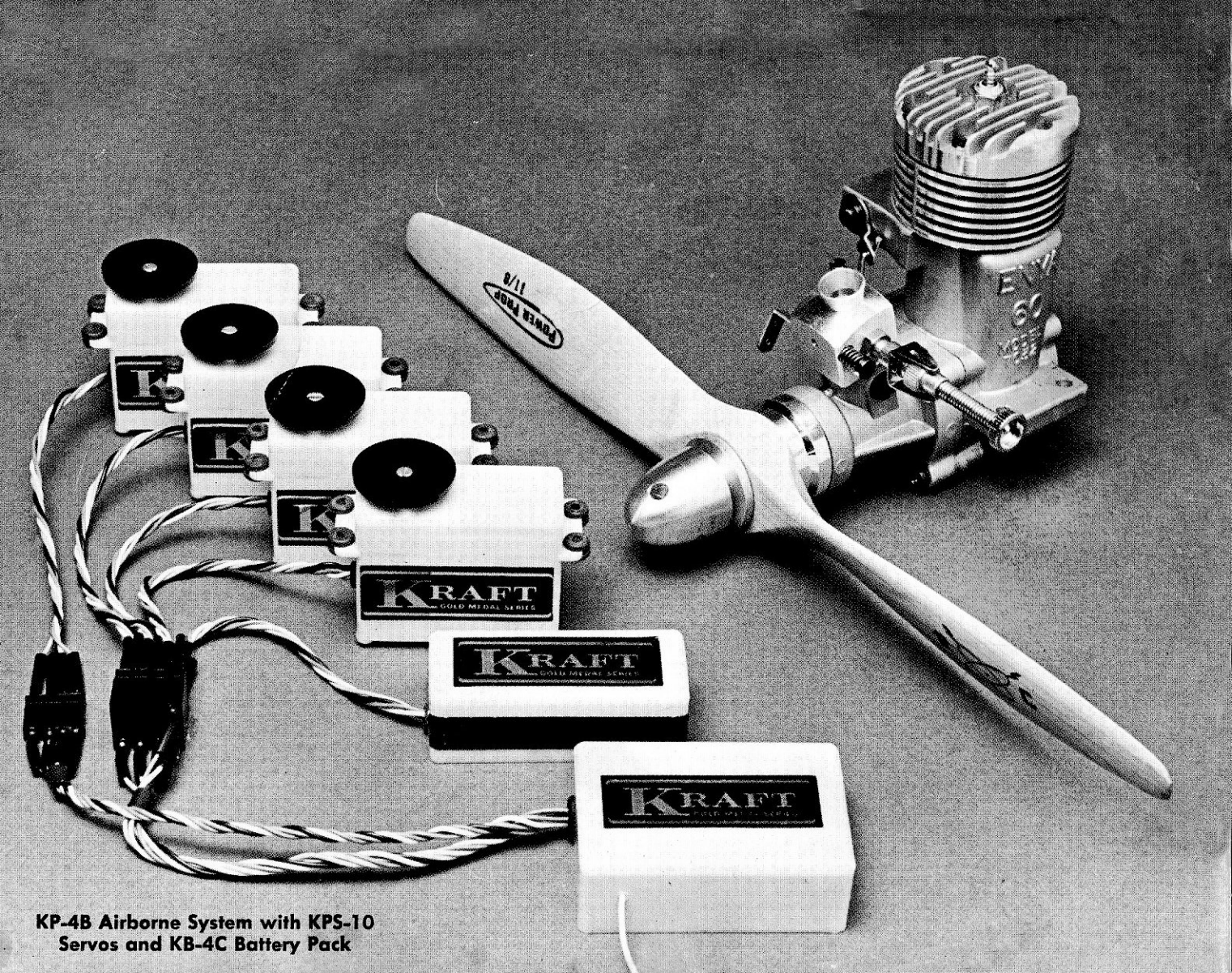
Control Stick Options

	Left Stick	Right Stick
Mode I	Elevator and Rudder	Aileron and Throttle
Mode II	Throttle and Rudder	Aileron and Elevator

Please see your nearest Kraft Dealer first. If none in your area, you may order direct. California residents add 5% state sales tax.

KRAFT SYSTEMS, INC.

2466 Seaman Avenue
South El Monte, California 91733
Telephone (213) 444-0469



KP-4B Airborne System with KPS-10 Servos and KB-4C Battery Pack