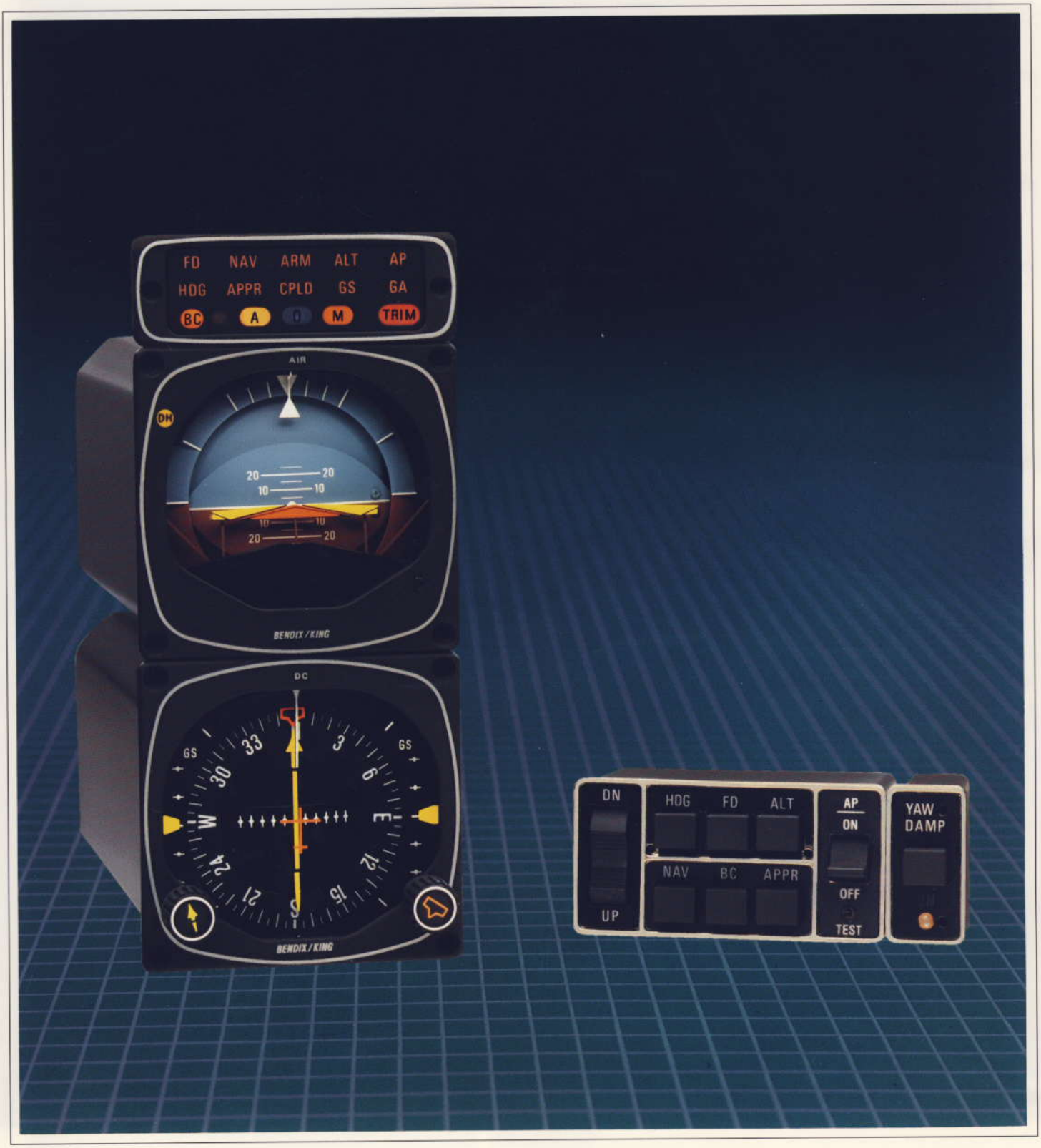
KFC 200

Bendix/King
Flight Control System



High performance, low price

To meet the standards of high-performance single and twin engine aircraft, Bendix/King offers the affordable KFC 200 automatic Flight Control System.

Fully TSO'd, the KFC 200 is a complete two-axis (pitch and roll with altitude hold) integrated system. It offers all standard operating modes, as well as many important pilot-oriented features usually found only in larger, more expensive units.

The KFC 200 incorporates an easy-scan instrument design, which helps reduce unnecessary eye travel by focusing the pilot's attention on primary flight information. Components include the KI 256 V-bar Flight Command Indicator, which combines pitch and roll steering command data in one easy-to-read single cue attitude display. When the Flight Director is off, the command bars are retracted out of view. The KI 256 offers a prominently-placed decision height (DH) annunciator light for use with the aircraft's radar altimeter.

The KFC 200 also includes the KCS 55A Slaved Compass System with remote electric gyro, and KI 525A Horizontal Situation Indicator (HSI). These instruments replace the standard directional gyro and course deviation indicator in the panel, combining slaved heading and VOR/LOC/Glideslope presentations in one unit.

Complete integration of the Flight Director and Autopilot systems allows the pilot to manually fly the displayed pitch and roll commands, or to couple these commands into the Autopilot and monitor its performance on the Flight Command Indicator.

System options available on some aircraft include a three-axis configuration with yaw damper, along with altitude preselect and alerting. But best of all, the KFC 200 is priced thousands of dollars less than comparable flight control systems.

For pilots not desiring a full Flight Director System, Bendix/King also offers the KAP 200 Autopilot. The KAP 200 features all the benefits and features of the KFC 200 except Flight Director. The KG 258 Attitude Reference Indicator replaces the KI 256 Flight Command Indicator.

Eleven modes of operation

The KFC 200 features 11 operating modes, offering the pilot automatically computed guidance in response to his selection of Flight Director/Autopilot command modes. Most modes of operation are activated by push-button switches on the mode controller. Complete mode status is displayed on the KA 285 Mode Annunciator panel.

The **Basic Attitude Reference Mode** is activated when the aircraft's engines are running ("power on"), but no other mode has been selected. The Flight Command Indicator and HSI will display existing attitude, heading and NAV information, but the Command V-bar will remain retracted out of view until a Flight Director/Autopilot mode has been selected.

The **Flight Director (FD)** mode adds the command V-bar, directing "wings level," with the pitch attitude command remaining the same as at the time of mode selection.

The **Autopilot (AP)** mode engages servos that enable control surfaces to respond to all selected Flight Director mode commands in both pitch and roll axes, while maintaining automatic pitch trim. Separate Autopilot servos and capstans make it easy to remove and service the control surface servos without derigging the surface control cables.

(Note: The following modes may be engaged during manual flight with only the Flight Director (FD) selected or with Autopilot (AP) engaged. When in 'FD' only, the KI 256 provides pitch and roll commands, but control of the aircraft must be maintained by the pilot.)

After setting the desired heading on the HSI, selecting the **Heading** (HDG) mode allows the system to command required banking to turn to and maintain the selected heading.

After using the HSI to set a course, the **NAV** (VOR/RNAV/LORAN) mode may be selected. The system's all-angle NAV course "Capture" feature gives the pilot complete freedom to select the proper intercept angle in response to ATC vectors. The NAV mode will then be "armed," and at the capture point the system will "couple" and command the necessary bank to capture and track a selected VOR, RNAV or LORAN course.

After using the HSI to set an inbound front approach course, select the **Approach** (APPR) mode (ILS, VOR or RNAV). The system's all-angle Approach Course Capture feature allows the pilot to select any intercept angle in response to ATC vectors. The Approach mode will be "armed," and at the appropriate capture point the system will "couple" and command the necessary bank and pitch to capture and track LOC and glideslope beams for precision approaches. For non-precision approaches, the system executes bank commands to capture and track VOR and RNAV courses.

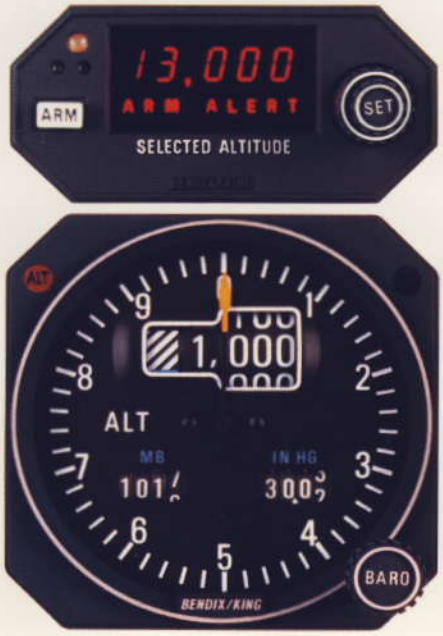
The **REV LOC (BC)** mode is enabled in Approach mode, and allows the system to command the bank necessary to capture and track a reverse localizer course, locking out glideslope in the process. The inbound front approach course is always set on the HSI to enable you to make course corrections toward, rather than away from, the needle.

Push the "Go Around" button to activate the **Go Around (GA)** mode, and the system will command wings level and nose up to missed approach climb attitude. Autopilot will be disconnected with GA, but may be re-engaged to track the Go Around.

The **Altitude Hold (ALT)** mode provides pitch commands, which maintain engaged altitude.

The **Vertical Trim** mode provides the capability to adjust or slew the Altitude Hold mode without disengaging and re-engaging the mode. If Altitude Hold is not engaged, the Vertical Trim will adjust the pitch attitude up or down.

The **Control Wheel Steering (CWS)** mode permits manual flight maneuvering without the need for disengaging and re-engaging the autopilot. Flight Director command bars remain synchronized to aircraft attitude for smooth re-engagement of the Autopilot upon release of the CWS button.



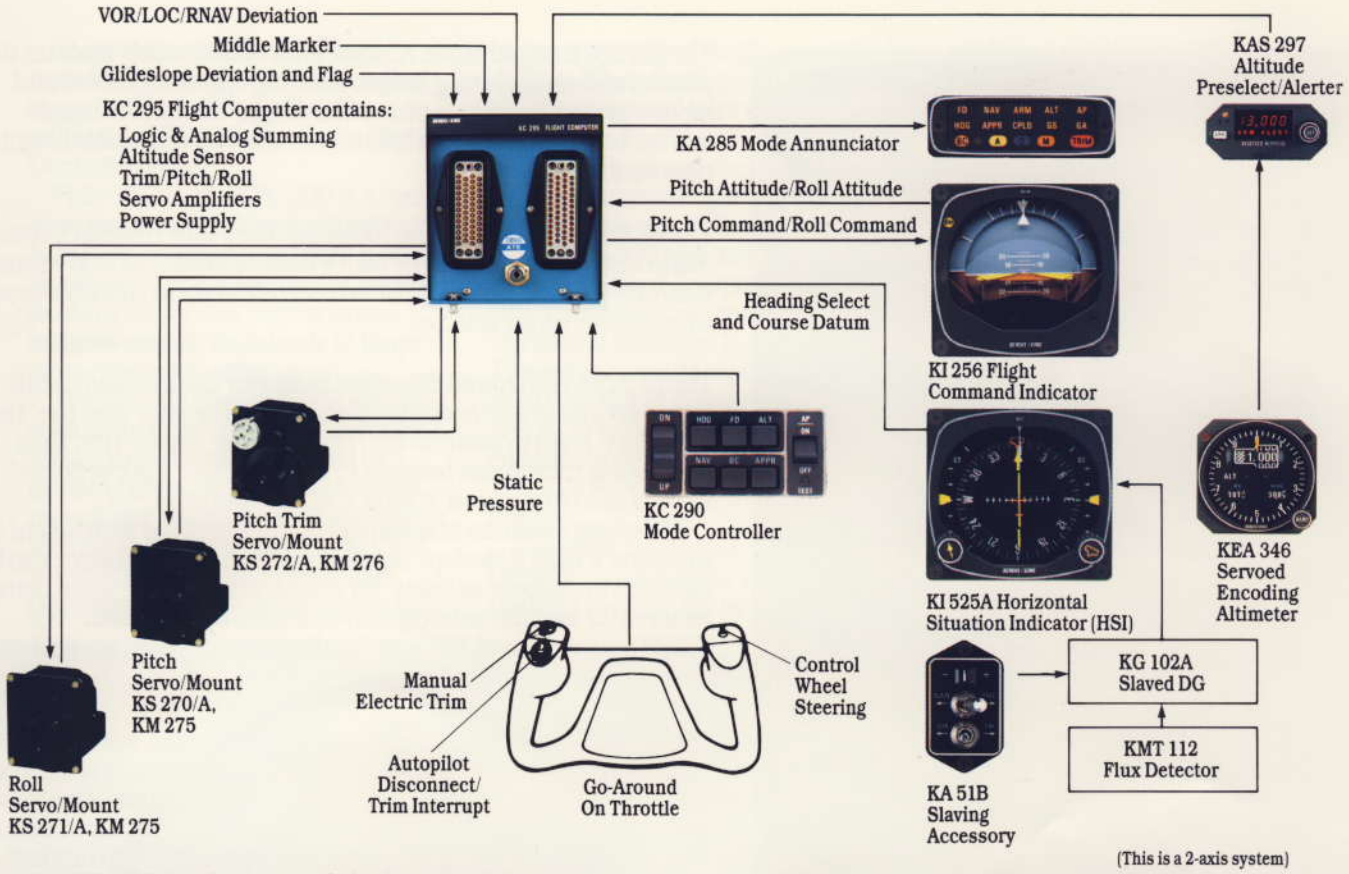
Performance options

Supplementing the KFC 200's capabilities, the KEA 346 Servoed Encoding Altimeter and the KAS 297 Altitude Preselector and Alerter offer accurate altitude preselect and alerting.

During climb or descent, enter the desired leveloff altitude with the concentric knobs labeled "Set," and arm the system by pressing the "Arm" button. As the aircraft approaches the preset altitude, the autopilot smoothly changes the airplane's pitch attitude. Then, when the preset altitude is reached, the system goes into altitude hold mode. Altitude alerting per FAR 91.51 is provided during climb or descent to a preset altitude, and an aural tone is sounded 300 feet above or below, and upon reaching the selected altitude.

The KEA 346 also provides encoded altitude to ATC transponders for altitude reporting capability. TSO'd to 50,000 feet, the unit displays altitudes to 50,000 feet in 100-foot increments on a counter drum. A pointer on the instrument's face indicates the precise altitude on a continuous, circular 1,000-foot scale. The altimeter setting is displayed in both millibars and inches of mercury. In the event of a power failure, a striped warning flag covers the counter drum.

The sum of the parts



(This is a 2-axis system)

The KFC 200 System has been certified with the Altitude Preselect/Alerting Option to provide complete altitude preselect/capture/alerting capability at an attractive price on many twins and selected high performance singles.

WARNING: Avionics installations require special skills, tools and test equipment. The Bendix/King two-year warranty system is valid only for equipment installed by an Authorized Bendix/King Sales and Service Center.

The KFC 200 STC honor roll

Aerostar:
Models 600,* 601,*

Beechcraft:
Bonanza, Model 36
Bonanza, Models A36,* A36TC*
Bonanza, Model B36TC*
Bonanza, Model F33A
Bonanza, Models S35,* V35,* V35A,* V35B*
Baron, Models 95-55,* 95-A55,* 95-B55,* 95-C55,* D55,* E55,* E55A*
Baron, Models 58,* 58A,* 58P,* 58PA,* 58TC,* 58TCA*
Queen Air, Models 65, A65, A65-8200, 70, 65-80, 65-A80, 65-A80-8800, 65-B80

Cessna:
Models 182P, 182Q
Models R182, TR182 ("RG")
Models U206G, TU206G
Centurion, Models 210K, T210K, 210L,* T210L,* 210M,* T210M,* 210N,* T210N*
Pressurized Centurion, Model P210N*
Models 310P,* T310P,* 310Q,* T310Q,* 310R,* T310R*
Model 340A*
Model 402C*
Model 404*
Model 414A*
Model 421C*

Mooney:
Models M20J 201,* M20J 205,* M20K 231,* M20K 252*

Piper:
Navajo C, Model PA 31*
Navajo CR, Model PA 31-325*
Navajo Chieftain, Model PA 31-350*
Seneca II, Model PA 34-200T*
Seneca III, Model PA 34-220T*

*Denotes additional STC for Altitude Preselect and Alert options

Panel-mounted displays and controls

The **KA 285 Integral Mode Annunciator** continuously updates the pilot on system operating status, showing operating modes and modes "armed" prior to capture. The display includes integral marker beacon lights, trim failure warning and automatic brightness control.

The **KI 256 Flight Command Indicator,** the Flight Director's command instrument, is also the pilot's basic attitude/horizon reference indicator. The command V-bar is designed to automatically retract when no modes are selected.

The **KI 525A Horizontal Situation Indicator** displays constantly-slaved gyro magnetic heading information. The pilot uses the "Heading Select" knob to position the "Heading Bug" on the HSI, thus referencing the aircraft heading to be flown. The "Course Select" knob is used to choose a VOR/LOC/RNAV course.

Glideslope deviation is shown on both sides of the instrument face whenever a valid glideslope signal is received. The glideslope can be captured from above or below, for greater convenience when being vectored for localizer interception on a tight ILS approach. TO/FROM indicators and NAV and Heading warning flags are also displayed on the HSI.

The **KC 290 Mode Controller** provides push-button selection of all Flight Director/Autopilot modes. A Vertical Trim feature offers conventional pitch attitude trim, but also permits altitude adjustments while in the Altitude Hold mode—without disturbing the selected Flight Director mode or disengaging the Autopilot. The compact KC 290 fits easily in most panels and pedestals.

The **KC 291 Yaw Mode Controller** is installed with the KC 290 Mode Controller whenever the optional yaw (rudder) axis is included in the system. The yaw axis is wired to automatically engage when the Autopilot is engaged. The yaw damper may be disengaged with either the KC 291 or the Autopilot disconnect.

The KC 291 also permits independent operation of the Yaw Damper Mode when the Autopilot is not engaged.

The **KC 295 Flight Computer,** the "brain" behind the entire Flight Control System, provides computed pitch and roll commands to the Flight Command Indicator's V-bar. Small enough to mount almost anywhere on the aircraft, it features solid-state components on plug-in circuit boards to enhance reliability and serviceability. The entire system operates on 14 or 28 volts DC, eliminating the need for an external electrical inverter. In addition, a solid-state altitude sensor is included in the computer, providing an accurate and reliable Altitude Hold capability.